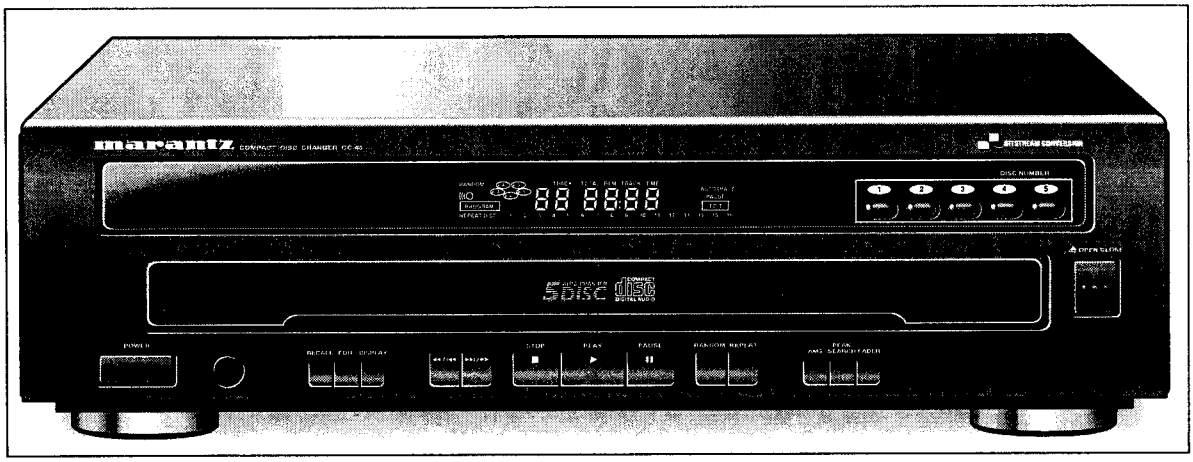
Service Manual

74CC45/02B/07B/UBL
74CC65/02B/07B/UBL

Compact disc player



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marantz®

model CC45 - CC65

First issue 1994

PCS 60 881

4822 725 25228

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
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ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA
MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, NSW 2140
AUSTRALIA

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien
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Sagamihara-shi, Kanagawa
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AL ALAMIAH ELECTRONICS
P.O.Box 8196
Salmiah
22052 Kuwait

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P.O.Box 5954
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Johannesburg 2000
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Apartado 2065
Madrid 28027
Spain

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MARANTZ
Box 1324
17125 Solna
Sweden

SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich-Müllingen
Switzerland

TRADING
MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

All of the above locations are fully equipped to take care of your total service needs or can advice you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/02B	: 220-230V (+11%-10%)
	/07B	: 240V (+10%-12%)
	/UBL	: 120V (±10%)
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection		: see circuit diagram power supply
4.Power consumption mains, operated		: 10W

Line output

1.Number of channels	: 2
2.Output voltage	: 2 Vrms ± 2 dB
3.Unbalance left-right	: max. 1,2 dB
4.Output resistance	: 1 kΩ
5.Amplitude linearity	: max. ± 0.4 dB from 20 Hz to 20 kHz
6.Phase non-linearity	: ± 5.0° from 20 Hz to 16 kHz
7.Out-band attenuation	: min 35 dB above 40 kHz
8.Signal to noise ratio	: min. 95 dB from 20 Hz to 20 kHz
9.Dynamic range (-60 dB)	: min. 85 dB from 20 Hz to 20 kHz
10.Total harmonic distortion + noise	: min. 80 dB from 20 Hz to 20 kHz
11.Intermodulation distortion	: min. 85 dB max. 1 kHz
12.Channel separation	: min. 85 dB from 20 Hz to 20 kHz
13.Automatic switched deemphasis with time constant 15/50 µs	
14.Non linearity at -90 dB	: typical ±1 dB

Variable headphone (low end)(only CC65)

1.Output voltage	: max. 5 Vrms ± 2dB
2.Unbalance left-right	: max. ± 1.2dB
3.Output resistance	: 120 Ω
4.Load impedance range	: 32 Ω to 600 Ω load
5.Output power	: 0 to 30 mW into 32 Ω load
	: 0 to 50 mW into 120 Ω load
	: 0 to 30 mW into 600 Ω load

Audio specs with 20 kHz/13th order Cauer filter 4822 395 30204

6.Signal to noise ratio(1 kHz)	: min. 90 dB(digital silence detection)
7.Dynamic range	: min. 75 dB (20 Hz -20 kHz)
8.Total harmonic distortion	: min. 70 dB (19 Hz - 20 kHz)
9.Channel separation	: min. 70 dB (1 kHz)(digital silence detection)
	: min. 65 dB (20 Hz - 20 kHz)(dig. sil. det.)

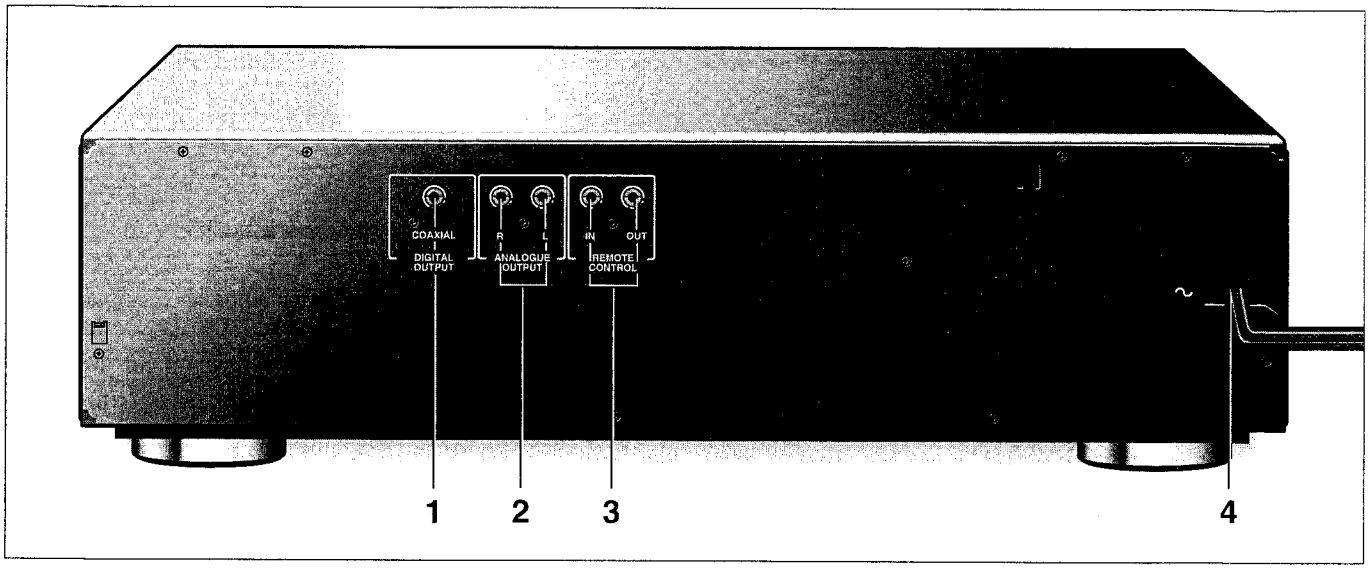
Dimensions and weight

1.Apparatus tray closed	: WxDxH 435 x 380 x 106 mm
2.Apparatus tray open	: WxDxH 435 x 500 x 106 mm
3.Weight	: 7 kg

Optical read-out system

1.Laser type	: Semiconductor AlGaAs
2.Wavelength	: 780 nm ± 20 nm
3.Light output (c.w.)	: max. 0.5 mW

INSTRUCTIONS FOR USE
INSTALLATION



POWER SUPPLY SETTING

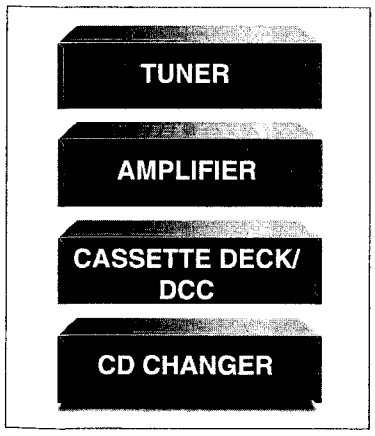
- Check if the type plate on the rear of your changer indicates the correct supply voltage.
- If your mains supply voltage is different, consult your dealer or our Service Organisation.

SITING THE COMPACT DISC CHANGER

Free standing
- Always position the changer horizontally on a flat, firm surface.
- Allow a free space of at least 3 cm above the changer so as not to interfere with the cooling of the changer.

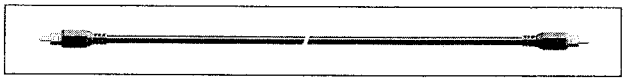
In an audio rack
- The changer can be sited in any desired position.

Stacked
- Site the changer preferably at the bottom or at the top.
- Never position the changer directly on top of a high-power amplifier, as such an amplifier gives off a substantial amount of heat.



CONNECTIONS

1 DIGITAL OUTPUT
For connecting the CD changer to e.g. a DCC deck or other digital equipment.
- Connect the DIGITAL OUTPUT socket to the socket DIGITAL IN of the other set.
  For *digital recording* from the CD changer, connect the DIGITAL OUTPUT socket to the socket DIGITAL IN of the DCC recorder.
  Use here a lead with one cinch plug on either end.



2 ANALOGUE OUTPUT
For the connecting cable to the amplifier.

- Insert a red plug into the 'R' socket and the other plug into the 'L' socket.
- Insert the two other plugs into the corresponding sockets of the CD or AUX input of your amplifier.
  You can also use the TUNER or TAPE IN connection, but ***never*** the PHONO input!

3 REMOTE CONTROL
For connecting up the equipment when you are incorporating the changer in a HiFi system with its own remote control system.

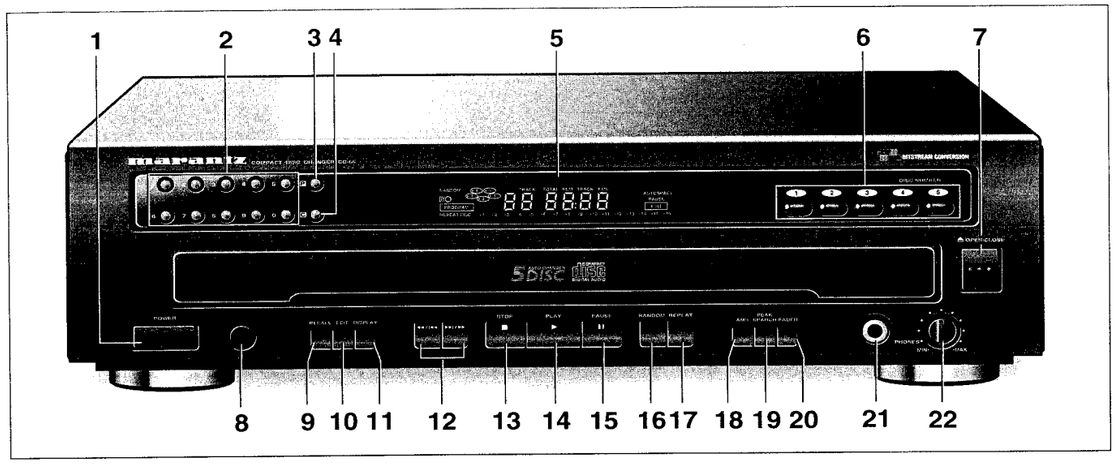
4 Mains lead

WARNINGS
- Do not expose the equipment to rain or moisture.
- Do not remove the cover from the equipment.
- Do not insert anything into the equipment through the ventilation holes.
- Do not handle the mains lead with wet hands.

CAUTION!
Use of controls or adjustments or performance of procedures other than those specified here in may result in hazardous radiation exposure.

This unit meets the requirements of EC Recommendation 82/499.

FUNCTIONAL OVERVIEW



FRONT OF CHANGER

1 POWER – Switching on and off.

2 1-0 digit buttons
- Selecting another track during play.
- Selecting a track to start play with.
- Selecting tracks when compiling a programme.
- Selecting the recording time when making a tape recording (EDIT).

3 P (programme) – Opening and closing the memory when compiling a programme.

4 C (ancel)
- Erasing a programme.
- Erasing track numbers from a programme.

5 Display – Informs you about the functioning of the changer.

6 DISC NUMBER
- Selecting another CD during play.
- Selecting a CD to start play with.
- Selecting CDs when compiling a programme.

7 OPEN/CLOSE – Opening and closing the CD compartment.

8 Infra Red sensor – Receives the signals from the remote control.

9 RECALL – Checking a programme.

10 EDIT – Activating the EDIT function when making a tape recording.

11 DISPLAY – Selecting the information you want to see on the display.

12 ◄◄/|◄◄ ►►|/►►
- Selecting another track during play.
- Selecting a track to start play with.
- Fast search to a particular passage during play.
- Selecting the recording mode when making a tape recording.
- Selecting the recording time when making a tape recording.

13 STOP
- Stopping play.
- Erasing a programme.

14 PLAY
- Starting play.
- Returning to the beginning of a track.

15 PAUSE – Interrupting play.

16 RANDOM – Playing in random order.

17 REPEAT – Repeating play.

18 AMS – Automatically playing the beginning of each track.

19 PEAK SEARCH – Searching the loudest passage (peak) on a CD or in a programme when making a tape recording.

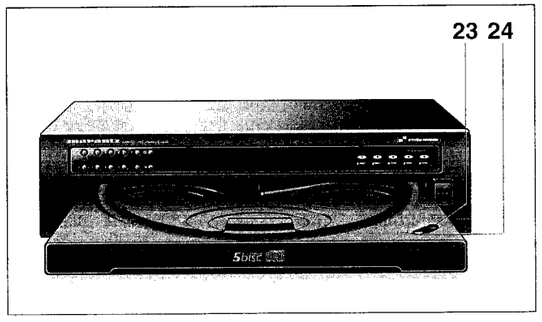
20 FADER – Fading in and out during play.

21 PHONES – Connecting headphones.

22 Level control– Adjusting the volume when listening with headphones.

23 QUICK PLAY – Immediate playing of a particular CD.

24 LOAD – Rotating the turntable in the CD compartment when inserting CDs.



DISPLAY

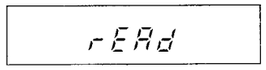
RANDOM – Lights up when the tracks are played in random order.
(((– Lights up when the changer receives a command from the remote control.
PROGRAM
- Flashes when a programme is being compiled.
- Lights up when a programme is being played.

REPEAT DISC – Lights up when you repeat a CD.
REPEAT – Lights up when you repeat all CDs or a programme from them.
1 - 5 CD number indicator
- Flashes when you switch the changer on.
- Indicates the number of CDs in the CD compartment.
- Indicates what CD is being played.

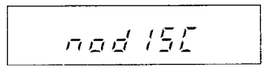
TRACK – Indicates:
- what track is being played;
- the number of tracks on a CD or in a programme.

TRACK TIME – Indicates the elapsed playing time of the track being played.
REM(aining) **TRACK TIME** – Indicates the remaining playing time of the track being played.
TOTAL REM(aining) **TIME** – Indicates the remaining playing time of a CD.
TOTAL TIME – Indicates the total playing time of a CD.
AUTOSPACE – Lights up when an extra pause is inserted between the different tracks (when making a synchronized recording).
PAUSE – Lights up when play is interrupted.
EDIT – Lights up when the player is put into the EDIT mode.
1-15 track number indicator – Shows the number of tracks on a CD.
+15 – Lights up when there are more than 15 tracks on a CD.

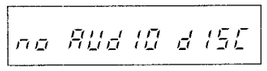
Display messages:



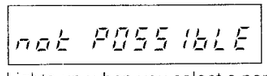
Lights up when a CD's contents list is being scanned.



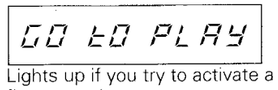
Lights up when there are no CDs in the CD compartment.



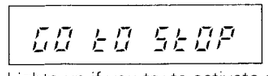
Lights up when insert a non audio CD (CD-ROM, CD-I or CDV).



Lights up when you select a non-existent track number.



Lights up if you try to activate a function for which you must first start play.

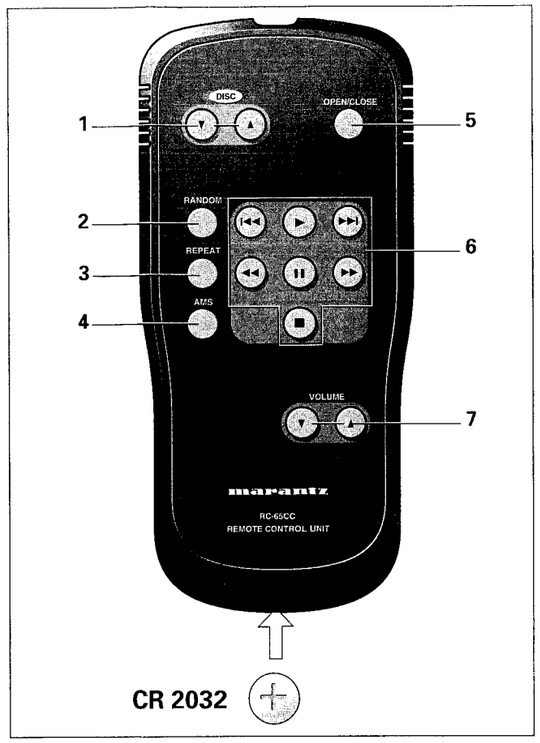


Lights up if you try to activate a function for which you must first stop play.

REMOTE CONTROL - GENERAL

The remote control can be used for operating the CD changer (keys on front) as well as for operating a Marantz HiFi system (keys at the rear).

REMOTE CONTROL- FRONT (CD changer functions)



1 ▼ DISC ▲
- Selecting another CD during play.
- Selecting a CD to start play with.
- Selecting CDs when compiling a programme.

2 RANDOM – Playing in random order.

3 REPEAT – Repeating play.

4 AMS – Automatically playing the beginning of each track.

5 OPEN/CLOSE – Opening and closing the CD compartment.

6 |◄◄ and ►►|
- Selecting another track during play.
- Selecting a track to start play with.
- Selecting the recording mode when making a tape recording.
- Selecting the recording time when making a tape recording.

►
- Starting play
- Returning to the beginning of a track.

◄◄ and ►►
- Fast search to a particular passage during play.

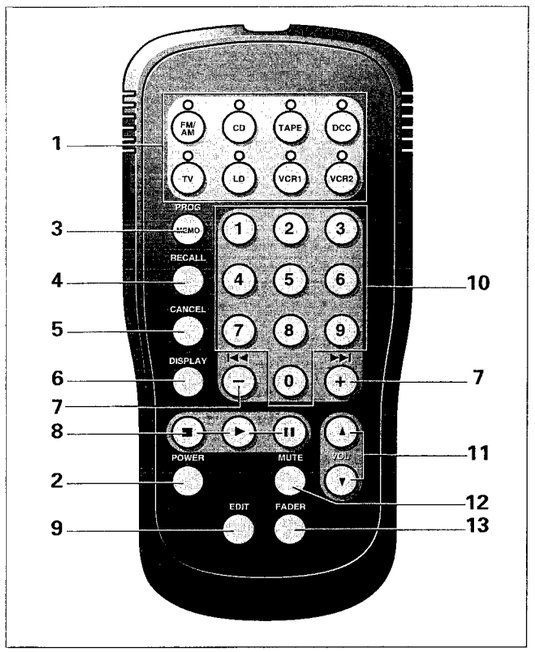
II
- Interrupting play.

■
- Stopping play.
- Erasing a programme.

7 ▼ VOLUME ▲ – Adjusting the sound level when the changer is connected via the ANALOGUE OUTPUT or the DIGITAL OUTPUT to an amplifier or HiFi system *without* its own remote control.

FUNCTIONAL OVERVIEW

REMOTE CONTROL - REAR (system functions)



General functions

1 Source selection keys – Selecting the required source.

2 POWER – Switching the selected source on and off (standby).

11 ▲ VOL(ume)**▼** – Adjusting the sound level.

12 MUTE ▼ – Muting the sound from the loudspeakers.

Tuner functions (FM/MW)

4 RECALL – Tuning up.

5 CANCEL – Tuning down.

6 DISPLAY – Selecting mono or stereo reception.

7 – ⏮ and ⏭ **+** – Selecting preset stations.

10 1-0 digit buttons – Selecting preset stations.

TV functions (TV)

4 RECALL – Selecting a next channel.

5 CANCEL – Selecting a previous channel.

6 DISPLAY – Language selection.

9 EDIT – Switching between VIDEO and TV input.

10 FADER – Selecting the Picture in Picture (PIP) function.

Laser Disc functions (LD)

3 ■ – Stopping play.
▶ – Starting play.
II – Interrupting play.

9 EDIT – Selecting side A of a laser disc.

10 FADER – Selecting side B of a laser disc.

6 DISPLAY – Selecting the LD audio mode.

4 RECALL – Scanning forward.

5 CANCEL – Scanning backward.

Cassette deck/DCC functions (TAPE/DCC)

4 RECALL – Winding the tape.

5 CANCEL – Rewinding and winding the tape.

6 DISPLAY – Selecting the tape travel direction.

7 – ⏮ and ⏭ **+** – Selecting a next or previous track.

8 ■ – Stopping play.
▶ – Starting play.
II – Interrupting play.

9 EDIT – Selecting deck A of a double deck.

10 FADER – Selecting side B of a double deck.

CD functions (CD)

3 PROG(ramme) **MEMO** – Opening and closing the memory when compiling a programme.

4 RECALL – Checking a programme.

5 CANCEL
– Erasing a programme.
– Erasing track numbers from a programme.

6 DISPLAY – Selecting the information you want to see on the display.

7 – ⏮ and ⏭ **+**
– Selecting another track during play.
– Selecting a track to start play with.
– Selecting the recording mode when making a tape recording.
– Selecting the recording time when making a tape recording.

8 ■
– Stopping play.
– Erasing a programme.
▶
– Starting play.
– Returning to the beginning of a track.
II
– Interrupting play.

9 EDIT – Activating the EDIT function when making a tape recording.

10 1-0 digit buttons
– Selecting another track during play.
– Selecting a track to start play with.
– Selecting tracks when compiling a programme.
– Selecting the recording time when making a tape recording (EDIT).

13 FADER– Fading in and out during play.

Video recorder functions (VCR 1/VCR 2)

4 RECALL – Winding the tape.

5 CANCEL – Rewinding and rewinding the tape.

6 DISPLAY
– Language selection.
– Selecting the VCR audio mode.

8 ■ – Stopping play.
▶ – Starting play.
II – Interrupting play.

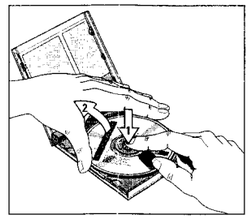
10 1-0 digit buttons – Setting the clock.

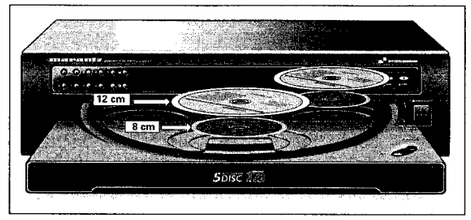
PLAYBACK

INSERTING THE CDs

NOTE! *Use only audio CDs; no CD-ROM, CD- I or CDV.*

• Press POWER ***1*** to switch the changer on.
– The changer will now start CD detection to check how many CDs there are in the CD compartment. The turntable will rotate slowly until all positions (1 - 5) in the CD compartment have been checked.
– The position which is being checked is always shown on the display *(DISC X)*.
– After CD detection the 1-5 CD number indicator will show the number of CDs in the CD compartment.
• Open the CD compartment by pressing OPEN/CLOSE ***7***.
– *OPEN* lights up.
• Insert the CDs, ***printed side up***; use the LOAD button ***24*** to rotate the turntable in the CD compartment.





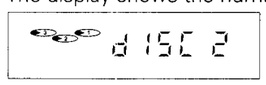
• Close the compartment by pressing OPEN/CLOSE ***7***.
– *CLOSE* lights up. The changer will start CD detection again.

NOTE!

– CD detection may *never* be interrupted. If, during detection, you press any button, then the changer will stop detection and the display will give an incorrect indication of the number of CDs in the CD compartment.
– ***Always*** remove all CDs from the CD compartment if you want to transport the changer.

NORMAL PLAYBACK (PLAY)

– The display shows the number of the current CD.

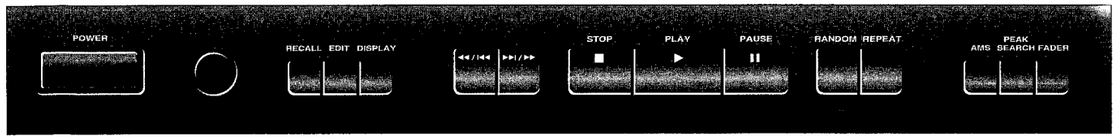


• Press PLAY ***14*** to start playback.
– *READ* lights up and play starts from the first available CD.
– The CD number indicator (1-5) always shows what CD is being played (▶ X) and the track number indicator (1-15) shows how many tracks are on the CD; when a track has been played, its number disappears.
– The track being played and its elapsed playing time are shown under TRACK and TRACK TIME. See 'CALLING UP INFORMATION ON THE DISPLAY' on page 11 if you wish to see other information on the display.

– Play will stop after all CDs have been played.
• Press POWER ***1*** to switch the changer off.

NOTE!

– You can also press PLAY ***14*** immediately after inserting the CDs; the compartment then closes automatically.
– Use the PREFERRED POSITION in the CD compartment if you wish to insert only *one* CD and then start play by pressing the QUICK PLAY button ***23***. Play will then start immediately with the inserted CD.
– You can interrupt playback by pressing PAUSE ***15***; PAUSE then lights up. Press PLAY or PAUSE to restart.
– If you press PLAY *during play*, the current track will start again from the beginning.
– You can stop playback by pressing STOP ***13***.
– If you press OPEN/CLOSE ***7*** *during play*, the CD compartment will open while play continues. The three CDs *outside* the changer may now be changed without playback being interrupted.



SELECTING ANOTHER TRACK DURING PLAY (1-0)

- Key in the desired track number (on the current CD); numbers consisting of two figures must be keyed in ***within 2 seconds***.
- The music stops and a moment later the selected track begins to play.

NOT POSSIBLE lights up if you select a non existent number.
You can also select the number by using ◄◄/I◄◄ or ►►I/►► ***12*** *(press less than 0.5 seconds).*

SELECTING ANOTHER CD DURING PLAY (DISC NUMBER)

- Key in the desired CD number.
- The music stops and a moment later the selected CD begins to play.

NOT POSSIBLE lights up if you select a non-existent number.

SEARCHING FOR A PASSAGE DURING PLAY (◄◄/I◄◄ ►►I/►►)

- Hold ◄◄/I◄◄ ***12*** down to search backwards to the beginning.
- Hold ►►I/►► ***12*** down to search forwards to the end.

The searching speed is determined by how long a key is pressed:
- the first 2 seconds fairly slowly, with sound;
- then at the maximum speed, with no sound.

If you reach the end of the last track and release ►►I/►► ***12***, play will resume a few seconds before the end of the CD.

STARTING WITH A PARTICULAR CD (DISC NUMBER)

- Key in the required CD number.
- If the CD compartment was open, it will now close.
- Play starts from the selected CD.

NOT POSSIBLE lights up if you select a non-existent number.

STARTING WITH A PARTICULAR TRACK (1-0)

- First select the number of the required CD using DISC NUMBER ***6***.
- Then key in the required track number (numbers consisting of two figures must be keyed in ***within 2 seconds***).
- If the CD compartment was open, it will now close.
- Play starts from the selected track.

You can also select the (track) number by using ◄◄/I◄◄ or ►►I/►► ***12*** *(press less than 0.5 seconds)* and then pressing PLAY ***14***.
NOT POSSIBLE lights up if you select a non-existent (track) number.

SCANNING CDs (AMS)

All CDs:
- Press AMS ***18*** before or during play.
- If the CD compartment was open, it will now close.
- *SCAN* lights up and the first 10 seconds of each track are played in turn (starting from the current track). 10 seconds are counted down each time under REM(aining) TRACK TIME.

- When the changer reaches a track which you wish to hear in full, press AMS again or PLAY ***14***.

One CD:
- Select the number of the required CD using DISC NUMBER ***6***.
- Press AMS ***18***, ***within the time*** the CD number is flashing on the display.
- Now only the first 10 seconds of each track on the selected CD will be played in turn.

PLAYING IN RANDOM ORDER (RANDOM)

All CDs:
- Press RANDOM ***16*** before or during play.
- If the CD compartment was open, it will now close.
- RANDOM lights up and all the tracks are now played in a random order.

- If you press ►►I/►► ***12***, you will select any one of the following tracks.
- Press RANDOM again if you wish to return to normal play.

NOTE!

If, during play, you open the CD compartment to change CDs (see 'NORMAL PLAYBACK' on page 9) then playback in random order will be cancelled. Playback will stop as soon as the last track of the current CD has been played (in normal order).

One CD:
- Select the number of the required CD using DISC NUMBER ***6***.
- Press RANDOM ***16***, ***within the time*** the CD number is flashing on the display.
- *DISC* and RANDOM light up; the tracks of the selected CD will now be played in a random order.

- If you press ►►I/►► ***12***, you will select any one of the following tracks.
  If you press REPEAT ***17***, the tracks will be repeated in a different order each time, although the first track will always be the same.
- When all tracks of the selected CD have been played, playback stops.
- Press RANDOM again if you wish to return to normal play.

REPEATING PLAY (REPEAT)

Repeating a CD:
- Press REPEAT ***17*** before or during playback of the CD.
- REPEAT DISC lights up; the CD will now be repeated continuously.

- Press REPEAT *twice* to stop the CD being repeated.

Repeating all CDs:
- Press REPEAT ***17*** *twice* before or during playback.
- REPEAT lights up; all CDs will now be repeated continuously.

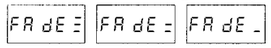
- Press REPEAT again to stop the CDs being repeated.

ACTIVATING THE FADE- IN AND FADE-OUT FUNCTION (FADER)

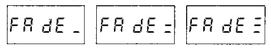
NOTE!

The FADER function can be used if the changer is connected to the amplifier or the system via the ANALOGUE OUTPUT or the DIGITAL OUTPUT.

- During play press FADER ***20***.
- The sound level will now gradually decrease (FADE OUT), after which the changer will go into the PAUSE mode.



- Press FADER again.
- Play continues and the sound level will increase again to the originally set level (FADE IN).



SEARCHING THE LOUDEST PASSAGE (PEAK SEARCH)

- In STOP mode, press PEAK SEARCH ***19***.
- *SELECT DISC* lights up.
- Select the number of the required CD using DISC NUMBER ***6***.
- The CD will now be scanned for the loudest passage (the peak).
- The display shows the track being scanned and its elapsed playing time.

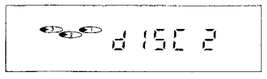
- When the loudest passage has been found it will be repeated continuously (from 2 seconds before the peak until 2 seconds after the peak)
- You can now adjust your recording device.
- You can stop the scan by pressing STOP ***13***: if you press PLAY ***14***, the CD will be played from the beginning.

NOTE!
- When searching for the loudest passage in a programme (from one or more CDs) there is no need to enter the CD number(s).
- If you wish to record tracks from different CDs you have to repeat peak search for each CD.

CALLING UP INFORMATION ON THE DISPLAY (DISPLAY)

In STOP mode:

Text display
- After loading the CDs and closing the CD compartment, the display shows the number of the CD to be played (= default display in STOP mode).



During play:

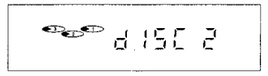
1. Time display
- When you start play (from STOP mode), the display shows the elapsed playing time of the current track (= default display in PLAY mode).

- Press DISPLAY ***11*** whenever you want to know the remaining playing time of the current track (REM TRACK TIME).

- Press DISPLAY again if you wish to know the remaining playing time of the entire CD (TOTAL REM TIME).

Note - TOTAL REM(aining) TIME indication is *not* available in SHUFFLE mode.
- If you wish to know the total playing time of the entire CD you must go back to STOP mode *first* and *then* press DISPLAY.
- The display now shows the number of tracks and the total playing time of the current CD (TOTAL TIME).

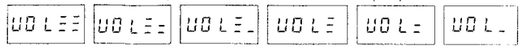
2. Text display
- If you press DISPLAY again, you will switch to text display; the display shows the number of the current CD.



ADJUSTING THE SOUND LEVEL (▼ VOLUME ▲)

NOTE!
- Use the ▼ VOLUME ▲ keys *(front of remote control)* only if the changer is connected via the ANALOGUE OUTPUT or the DIGITAL OUTPUT to an amplifier or HiFi system *without* its own control.
- The setting chosen with ▼ VOLUME ▲ will be cancelled when the changer is switched off.

- Hold ▼ VOLUME ***7*** *(front of remote control)* pressed down.
- The output signal from the player will now decrease gradually.
- The successive steps are shown on the display.



- Release the key as soon as the required sound level is obtained.
- Hold VOLUME ▲ ***7*** *(front of remote control)* pressed down.
- The output signal will now increase again gradually to the maximum level.

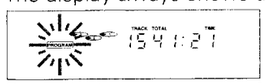
- Release the key as soon as the required sound level is obtained.

PROGRAMMING

STORING A PROGRAMME (P and 1-0)

- By programming the changer you can play up to 30 tracks in any required sequence.
- *FULL* lights up if you exceed the maximum of 30 tracks.
- *NOT POSSIBLE* lights up if you select a non-existent CD number.
- *USE 0-9* lights up if you press ◄◄/I◄◄ ►►I/►► ***12*** while programming.

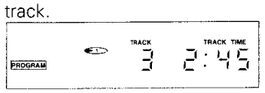
• In STOP mode, press P (programme) ***3*** to open the memory.
- *SELECT DISC* lights up and PROGRAM starts flashing.
• Select the number of the first required CD using DISC NUMBER ***6***.
• Key in the required track numbers of the selected CD using the 1-0 digit buttons ***2***.
- Every track number you enter in this way will be included immediately in the programme.
- The display always shows the number of tracks and the playing time of your programme.



• If you wish to store tracks from another CD, you should first enter the number of the CD.
• Press P to quit the PROGRAM mode.
• Press PLAY ***14*** to play the programme.

CHECKING THE PROGRAMME (RECALL)

• Press RECALL ***9*** prior to, during or after programmed play.
- *REV* lights up and all CD and track numbers appear in the programmed sequence on the display.
- Under TRACK TIME you will see the playing time of each track.



NO PROG will light up if no track numbers have yet been stored.
With RECALL you can proceed more rapidly to the next block of information.

PLAYING THE PROGRAMME (PLAY)

• Press PLAY ***14***.
- Playback starts with the first number of the programme.

The EDIT ***10***, P(rogramme) ***3*** and C(lear) ***4*** and PEAK SEARCH ***19*** buttons *cannot* be used during programmed play.
Search for a particular passage is only possible within the track being played.

ERASING A PROGRAMME (STOP, C or OPEN/CLOSE)

In PLAY mode:
• Press OPEN/CLOSE ***7*** or STOP ***13*** *(twice)*.

In STOP mode:
• Press OPEN/CLOSE ***7***, C ***4*** or STOP ***13***.

- The programme has now been erased.

ERASING A TRACK FROM A PROGRAMME (C)

• Press RECALL ***9*** before or after programmed play (STOP mode).
- All CD and track numbers appear in the programmed sequence on the display.
• Press C (cancel) ***4*** as soon as the number you wish to erase appears.
- The number has now been erased.
- The display shows the remaining number of tracks and the remaining programme time for a few seconds.

NO PROG will light up if no track numbers have yet been stored and if you have not pressed RECALL first before cancelling.

EDIT

The EDIT function has two recording modes in which you can store the recording time of the tape in the changer memory.

EDIT NORMAL – The changer will determine which tracks fit on each side of the tape and will stop after the last track. The tracks will be recorded in the order in which they appear on the CD(s).
EDIT OPTIMAL – The changer now calculates the combination of tracks that will optimize the use of available recording time.

NOTE!
- The EDIT function ***cannot*** be used for CDs containing more than 30 tracks.
- The ▼ VOLUME ▲ keys on the remote control *(**7** front and **11** rear)* may not be used during recording as they affect the strength of the signal from the changer.

BEFORE RECORDING

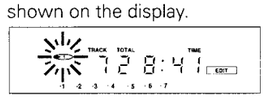
Preparation:
• A programme to be recorded, must be stored in advance. See 'PROGRAMMING' on page 12.
• If required you can search the loudest passage and adjust your recording device. See 'SEARCHING THE LOUDEST PASSAGE (PEAK SEARCH)' on page 11.
This can also be done *after* selecting the recording mode and the recording time. See below.
• Press EDIT ***10*** to activate the EDIT mode.
- EDIT lights up and *SELECT DISC* appears on the display.
• Select the number of the required CD using DISC NUMBER ***6***.
When recording a programme there is no need to enter the CD number(s).
- *NOT POSSIBLE* lights up if you select a non -existent disc number.

Selecting the recording mode:
- The display shows *EDIT* (= EDIT NORMAL which is the default setting).
• With ◄◄/I◄◄ ►►I/►► ***12*** you can now select OPT(imal), CANCEL or EDIT (NORMAL) again.
- The display shows *OPT(imal)*, *CANCEL*, or *EDIT* again.
• Press EDIT ***10*** to store the required recording mode (NORMAL or OPTimal).
If you select CANCEL, the EDIT mode will be cancelled and the changer will go back to STOP mode.
- As soon as you have stored the recording mode the display shows *C90* (default setting).

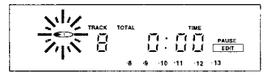
Selecting the recording time:
- As soon as you have stored the recording mode the display shows *C90* (default setting).
• With ◄◄/I◄◄ ►►I/►► ***12*** you can now select the required recording time:
C100, C105, C120, C30, C45, C60, C75 or *C90*.
• Other recording times can be selected using the 1-0 digit buttons ***2***; in EDIT NORMAL mode the recording time must be at least equal to the playing time of the first track on the first CD or in the programme.
In EDIT OPTimal mode the recording time must be at least equal to the playing time of the shortest track on the CD(s) or in the programme.
- *NOT POSSIBLE* lights up if you select a 'wrong' time.
• Press EDIT ***10*** to store the required recording time.
- The CD changer will now go back to STOP mode
• You can now record the CD or the programme.

RECORDING

• Press PLAY ***14***.
- Playback starts with the selected CD (or with the first track of the programme).
- The display shows the elapsed playing time of the current track.
• Press DISPLAY ***11*** to switch to other display information.
- The number of tracks for side A and their playing time are shown on the display.



- After the last track that fits on side A of the tape, the CD changer will go into PAUSE mode.
- PAUSE lights up.
- The track number indicator shows which tracks fit onto side B of the tape. Under TRACK you will see the number of the first track to be recorded.



• Turn the tape over or select the tape travel direction for side B.
• Press PAUSE ***15***.
- The remaining tracks will now be played.
- After the last track play will stop; *EDIT CANCELLED* lights up.

NOTE!
- As soon as you press PLAY ***14*** the other changer functions will temporarily be switched off to prevent the recording being interfered with; *EDIT ACTIVE* lights up if you press one of the other buttons during recording.
- You can quit the EDIT mode by pressing STOP ***13*** ; *EDIT CANCELLED* then lights up.
- *EDIT NOT POSSIBLE* lights up if you try to record a CD containing more than 30 tracks.
- Should the CD or the programme be longer than the *total* recording time of the tape, play will stop after the last track that fits onto side B of the tape.
- Should the first track of the first CD or the programme be longer than one side of the tape (= the entered recording time divided by two), then *EDIT NOT POSSIBLE* will light up. You will now have to enter another recording time.

ADDITIONAL INFORMATION

SYNCHRONIZED RECORDING

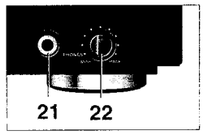
- Make sure that the changer is connected via the REMOTE CONTROL sockets to the REMOTE CONTROL IN (RC 5 IN) sockets of the Marantz cassette deck.
- Set the changer to the EDIT mode.
- Select the required recording time (see: 'EDIT' on page 13).
- Select the ⊐ (auto reverse) mode (if available) on the cassette deck
- Set the TIMER switch (if available) on the deck to 'PLAY/SYNC REC' position.
- Press REC PAUSE on the deck.
- The cassette deck will go into REC PAUSE mode (= synchronized recording mode).
- Press PLAY on the CD changer.
- Recording starts and after 4 seconds play starts at the beginning of the CD or the programme.
- After each track an extra pause of 4 seconds (AUTO SPACE) will be inserted.
- AUTOSPACE lights up.
- If you record a programme from different CDs the cassette deck will go into PAUSE mode every time the CD changer selects a new CD in the CD compartment. As soon as playback of the new CD starts, the deck will continue the recording.
- After the last track that fits on side A of the tape, the CD changer will go into PAUSE mode.
- As soon as the CD changer receives a command from the cassette deck, playback starts with the first rack for side B. You may also press PAUSE ***15*** to restart play.
- Synchronized recording will stop after the last track of the CD or the programme.

NOTE!

- As soon as you start recording, the other changer functions will temporarily be switched off to prevent the recording being interfered with; *EDIT ACTIVE* lights up if you press one of the other buttons during play/recording.
- You can stop playback/recording by pressing STOP ***13***.

LISTENING WITH HEADPHONES (PHONES)

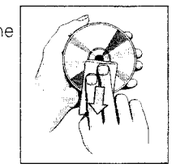
- Connect headphones with a 6.3 mm jack plug to the PHONES socket ***21***.
- The sound level is adjusted with control ***22***.



MAINTENANCE

The CDs

- Never write on the printed side of a CD.
- Do not attach any stickers to the CD.
- Keep the shiny surface of the disc clean. Use a soft lint-free cloth and always wipe the disc in a straight line from centre to edge.
- Never use cleaning agents for conventional records.
- Detergents or abrasive cleaning agents should not be used either.



The changer

- A chamois leather slightly moistened with water is sufficient for cleaning the changer.
- Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.

RECYCLING

Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

1. All redundant packaging material has been omitted. We have done our utmost to make the packaging easy separable into three mono-materials:
   - cardboard (box)
   - expandable polystyrene (buffer)
   - polyethylene (bags, protective foam sheet)
2. Your set consists of materials which can be recycled if disassembled by a specialized company.
3. Do not dispose of exhausted batteries with your household waste.
4. ***Note:*** Switching off the standby mode overnight will save energy.

TECHNICAL DATA

Typical Audio Performance

Frequency range: .....2 Hz - 20 kHz
Amplitude linearity: .....0.2 dB (20 Hz - 20 kHz)
Dynamic range: .....>96 dB
Signal-to-noise ratio: .....>110 dB
Channel separation: .....>102 dB
Total harmonic distortion: .....< .0025 %
D/A conversion: Bitstream conversion (96 x oversampling, 1 bit), in differential mode
Audio output level: .....2 V_{rms}
Impedance PHONES socket: .....8 - 1000 ohms

Power supply

Mains voltage and frequency:
see the type plate on the rear of the changer
Power consumption: .....10 W
Safety requirements: .....IEC 65

Cabinet

Material/finish: ...metal and polystyrene with decorative trim
Dimensions (w x h x d): .....435 x 106 x 380 mm
Weight: .....7 kg approx.

Subject to modification

This Compact Disc changer complies with radio interference requirements as laid down in EC regulations.

TROUBLE SHOOTING

If a fault occurs, run through the points listed below before taking your changer for repair.
If the fault remains, try to clear it by ***switching the changer off and on again***. If this also fails to help, consult your dealer.
Under no circumstances should you repair the changer yourself as this will invalidate the guarantee!

SYMPTOM	POSSIBLE CAUSE	REMEDY
– Playback does not start or interruption of playback.	– The current CD has been loaded upside down. – No CDs inserted. – The current CD is badly scratched or dirty. – Moisture condensation on the lens.	• Reload the CD, label side up. • Insert the CDs, label side up. • Clean the CD with a soft, lint-free cloth. • Leave the CD changer in a warm environment until the moisture evaporates.
– Sound skips (at the same part).	– The current CD is dirty.	• Clean the CD with a soft, lint-free cloth.
– The current CD skips tracks.	– The CD is damaged or dirty.	• Replace or clean the CD.
– Playback does not start from the first track (of the current CD).	– P (programme) or RANDOM activated.	• Switch off RANDOM or clear programme.
– No sound or bad sound.	– Loose or wrong connections. – Strong magnetic fields near the CD changer.	• Check connections. • Find another place for the unit or change connections.
– No sound or bad sound on headphones.	– Level control set to – position. – Headphones plug is dirty.	• Set level control. • Clean plug.
– Volume is too low.	– Sound level has been adjusted too low with the ▼ VOLUME ▲ on the remote control.	• Adjust sound level.
– Remote control does not function.	– Batteries are empty.	• Replace the batteries.
– Remote control commands are not properly received	– The distance between remote control and CD changer is larger than 10 metres.	• Reduce the distance between remote control and CD changer.

ESD

(GB) **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

(F) **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) **WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remîs à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

S Varning!

Osynlig laserstralning nar apparaten ar oppnad och spärrenär urkopplad. Betrakta ej stralen.

SF Varo!

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle.Ala katso säteeseen!

DK Advarsel!

Usynlig laserstraling ved abning. Undga unsaettelse for straling.

CAUTION
Invisible laser radiation when open.
Avoid exposure to beam.

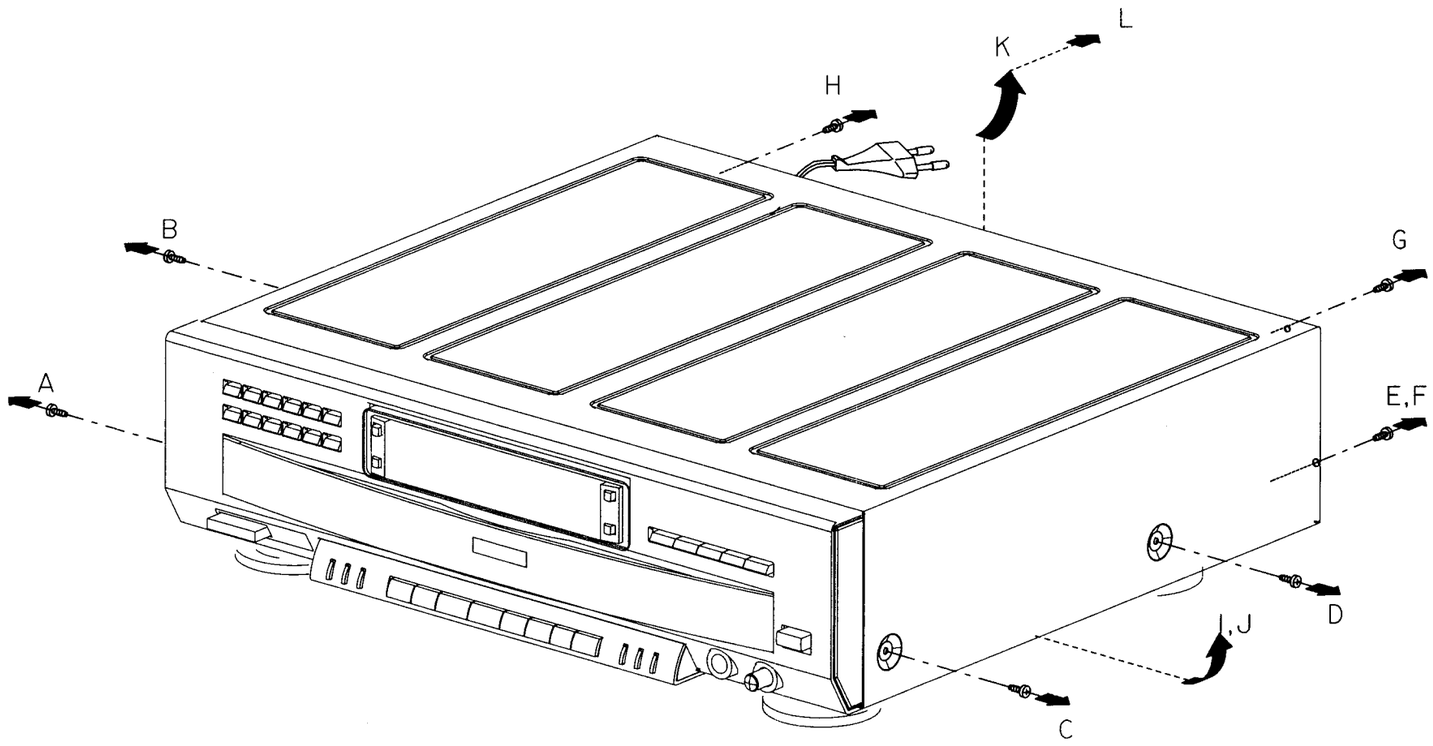
DANGER
Invisible laser radiation when open.
Avoid direct exposure to beam

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

SHOCK, FIRE HAZARD SERVICE TEST:
CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins(with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref. UL Standard NO.1492.

5

DISMANTLING INSTRUCTIONS
DEMOUNTING OF COVER

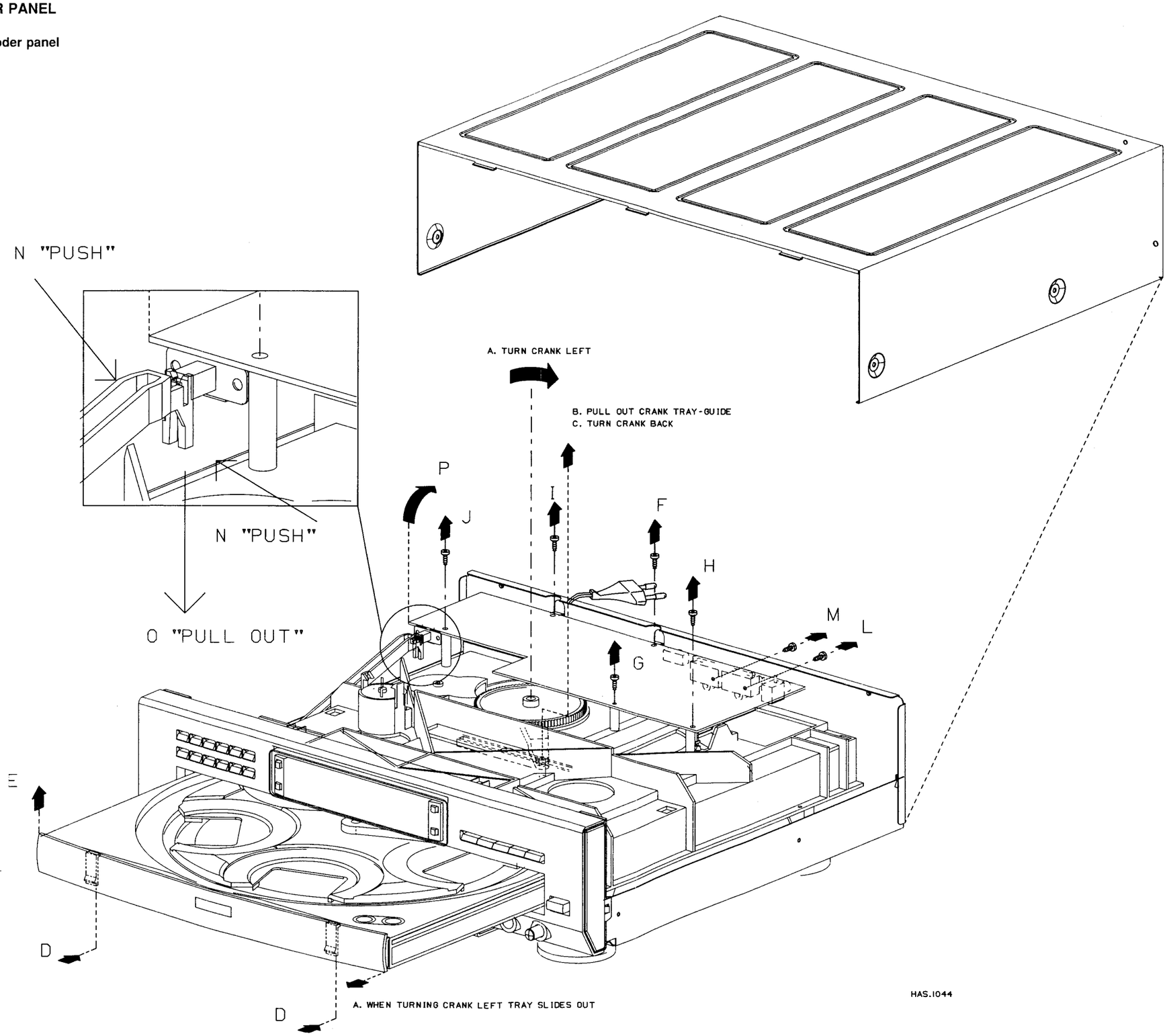


HAS.1043

6

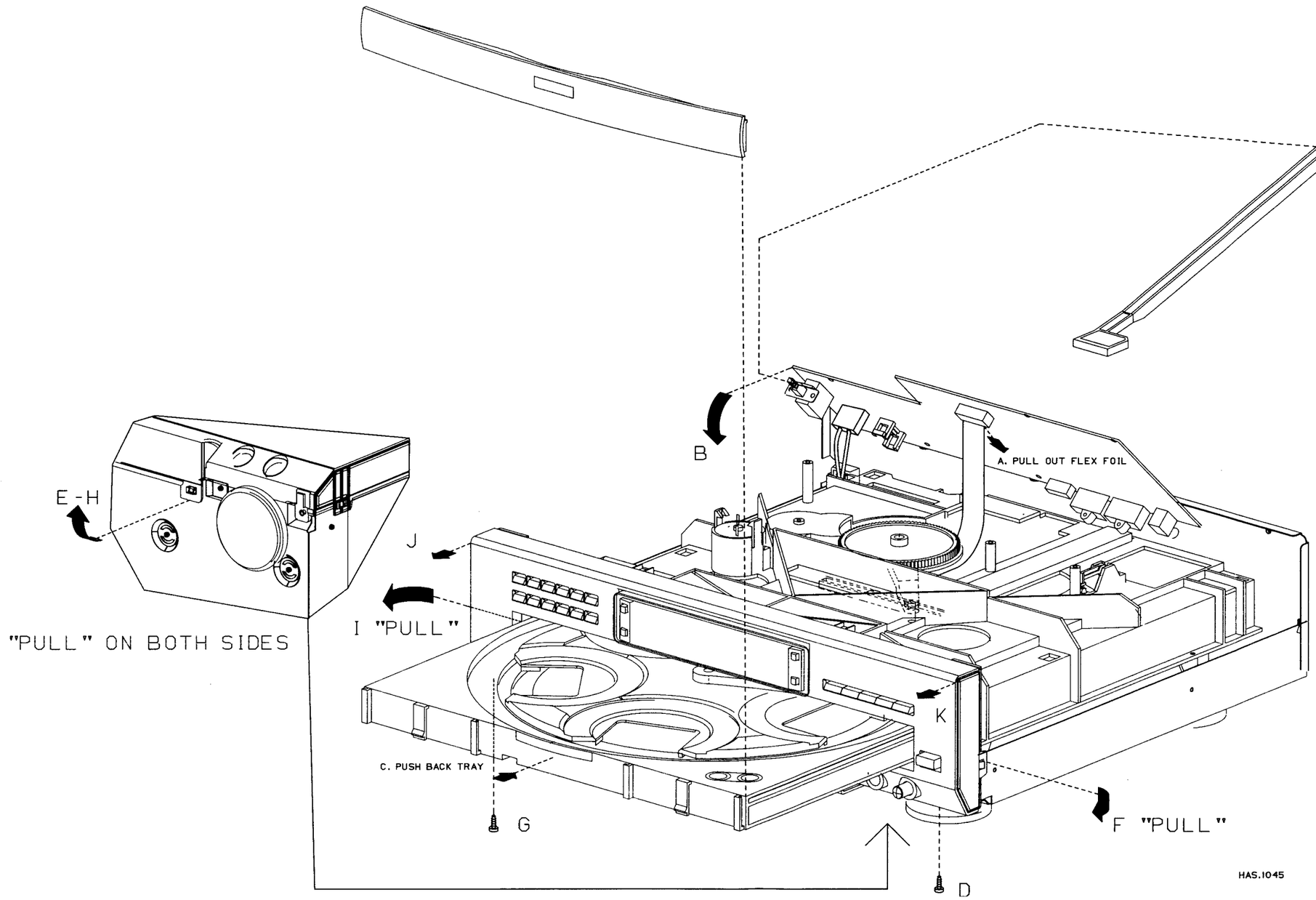
PULL OUT OF TRAY
DEMOUNTING OF TRAYFRONT
DEMOUNTING OF DECODER PANEL

NOTE: Before demounting decoder panel remove backplate.



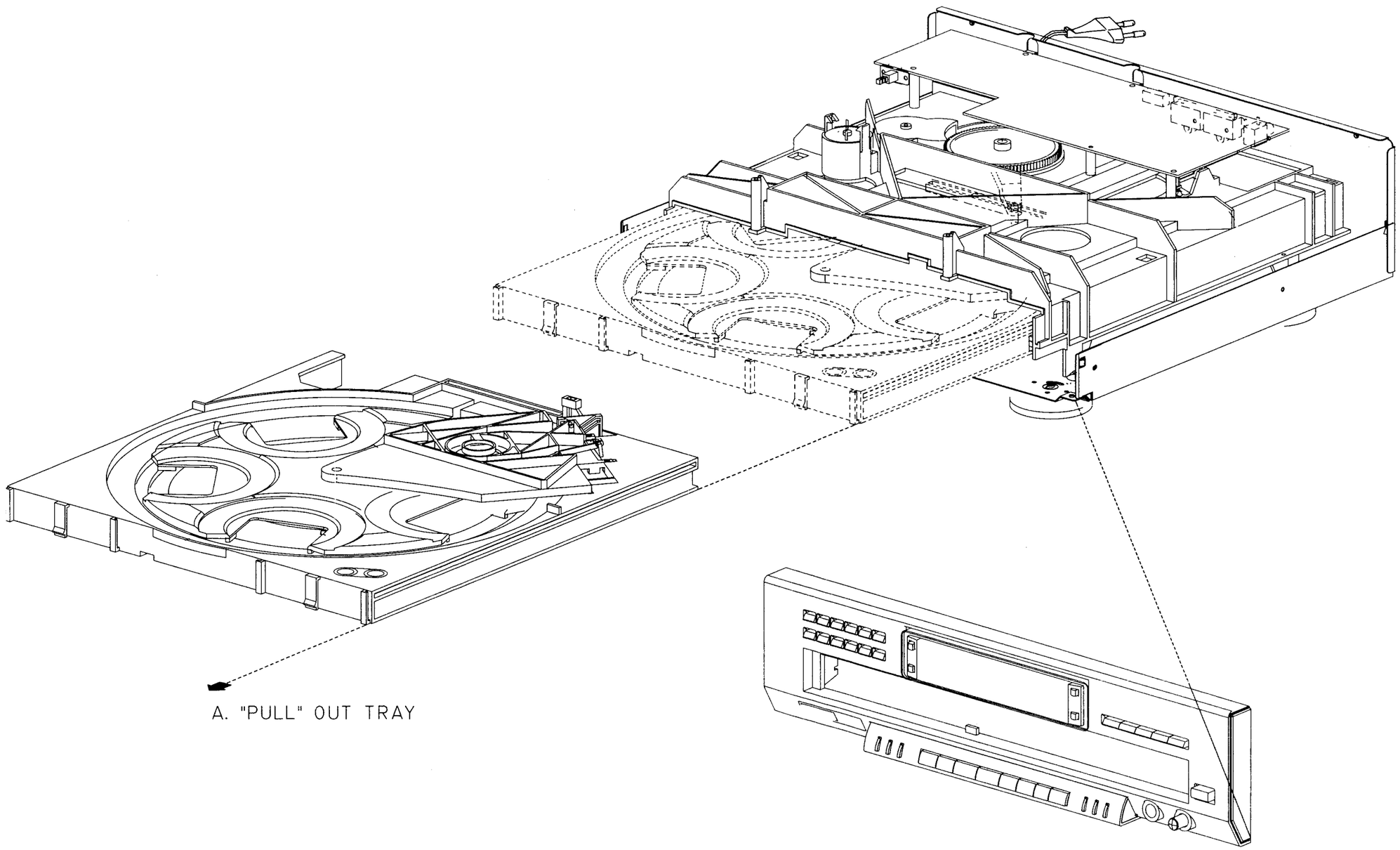
7

PULL OUT OF FLEXFOIL
DEMOUNTING OF FRONT



8

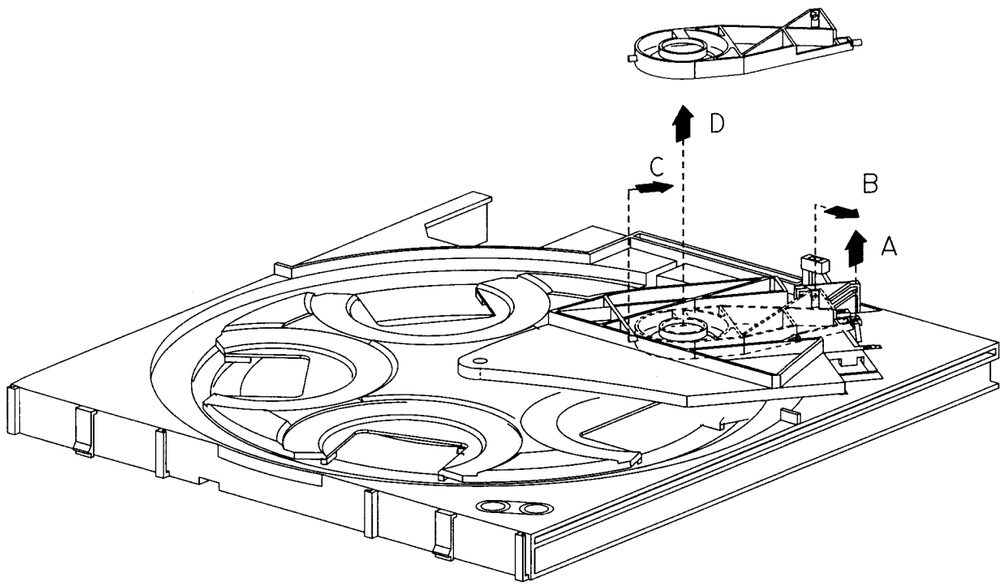
PULL OUT OF TRAY

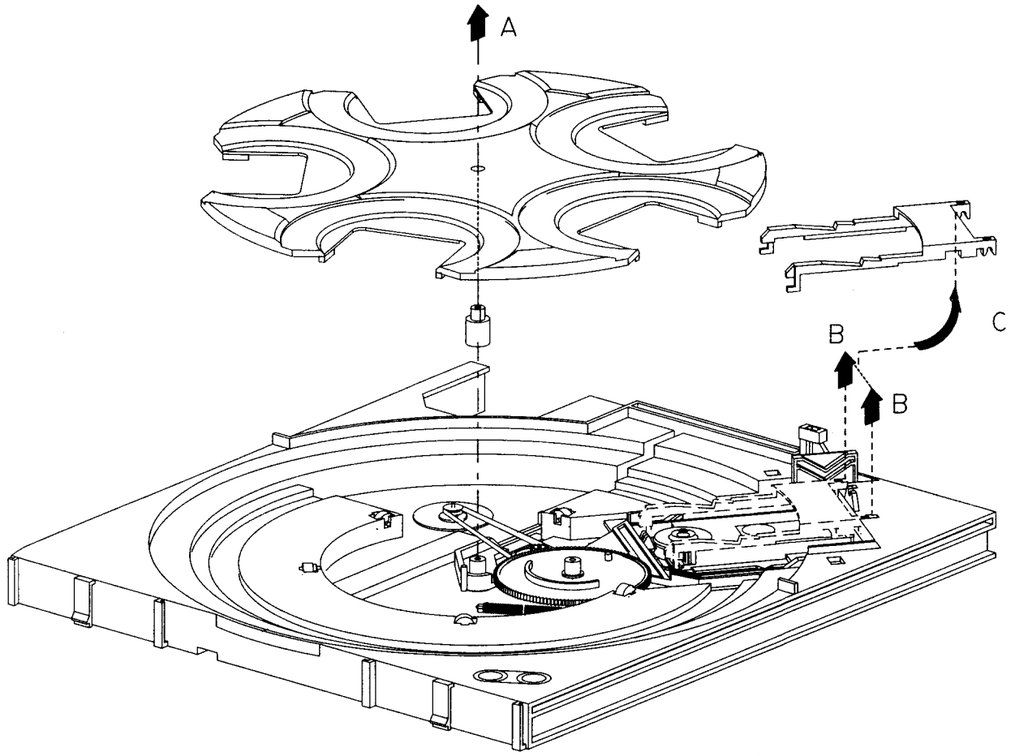


A. "PULL" OUT TRAY

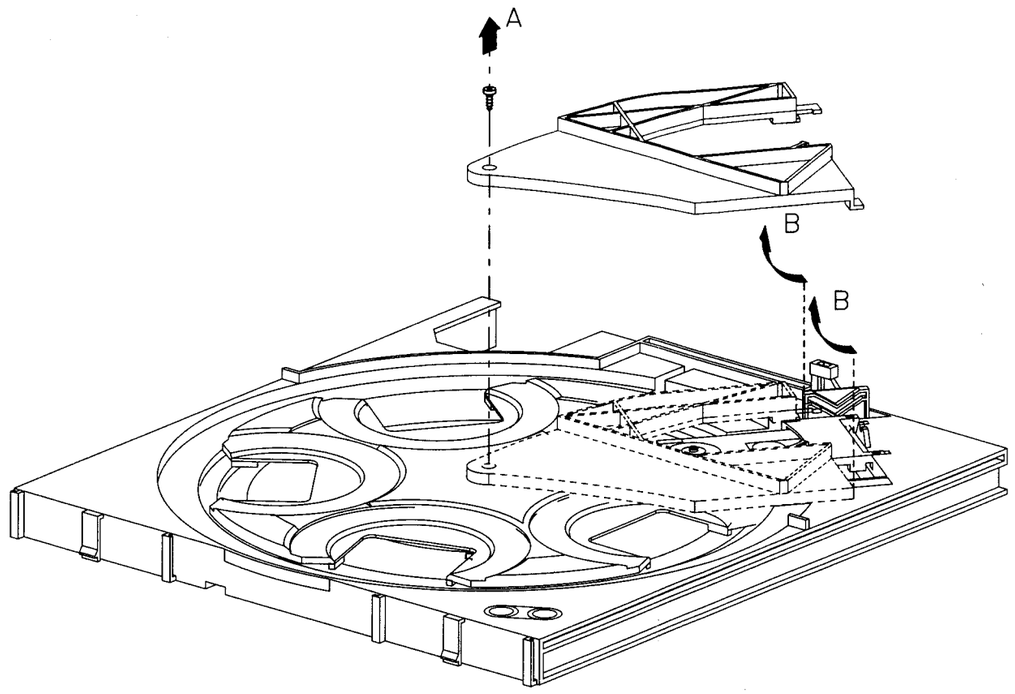
HAS.1046

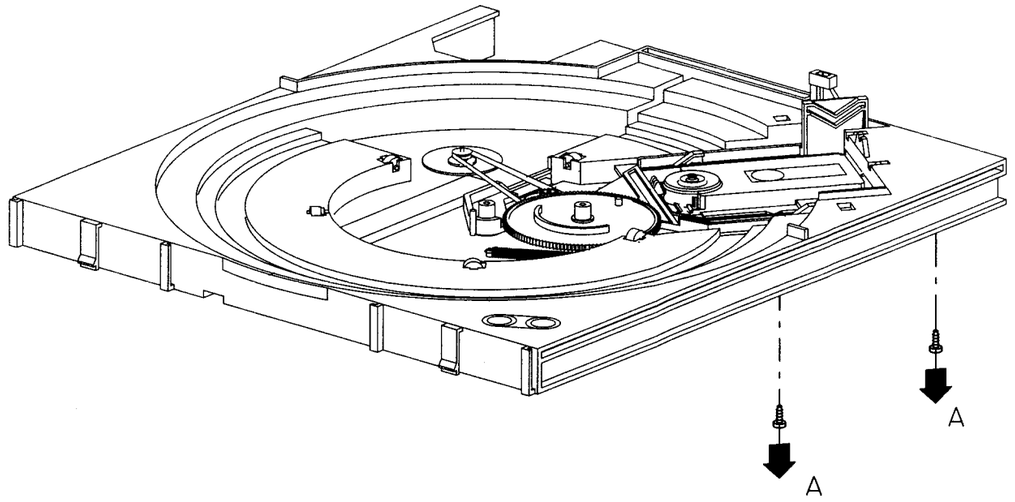
DEMOUNTING OF CARROUSEL
DEMOUNTING OF CDM





9

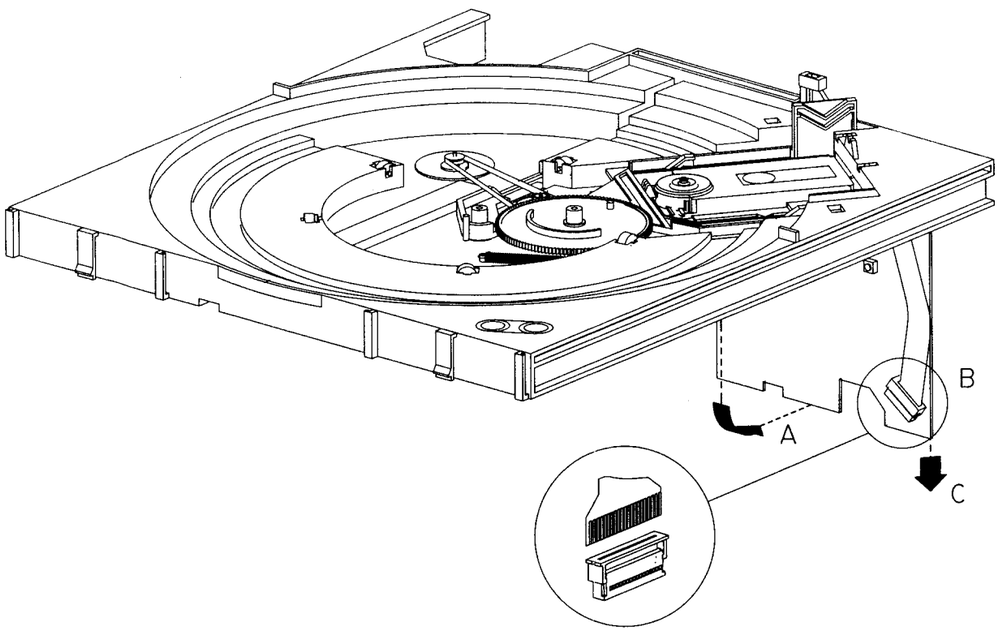


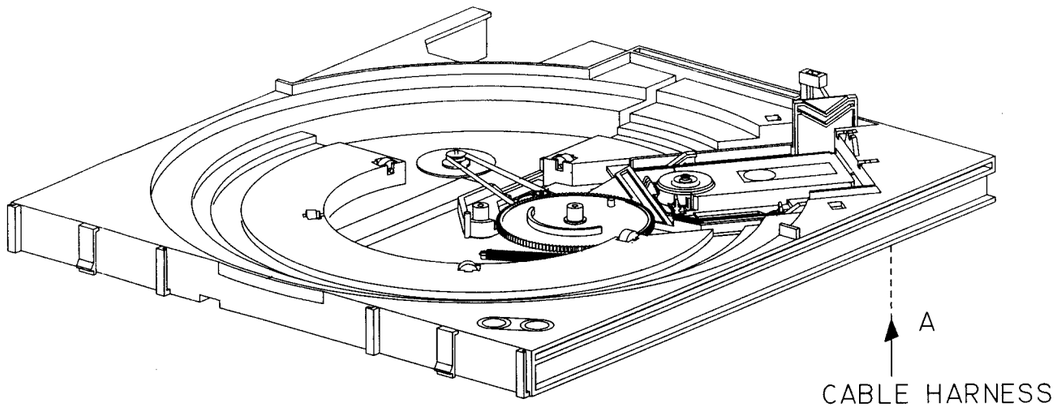


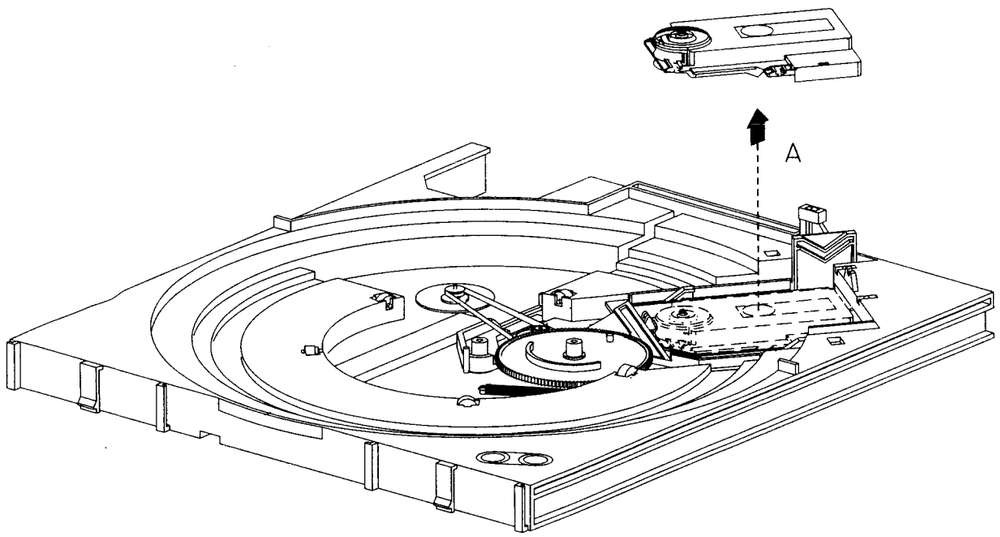
HAS.1047

10

DEMOUNTING OF CDM



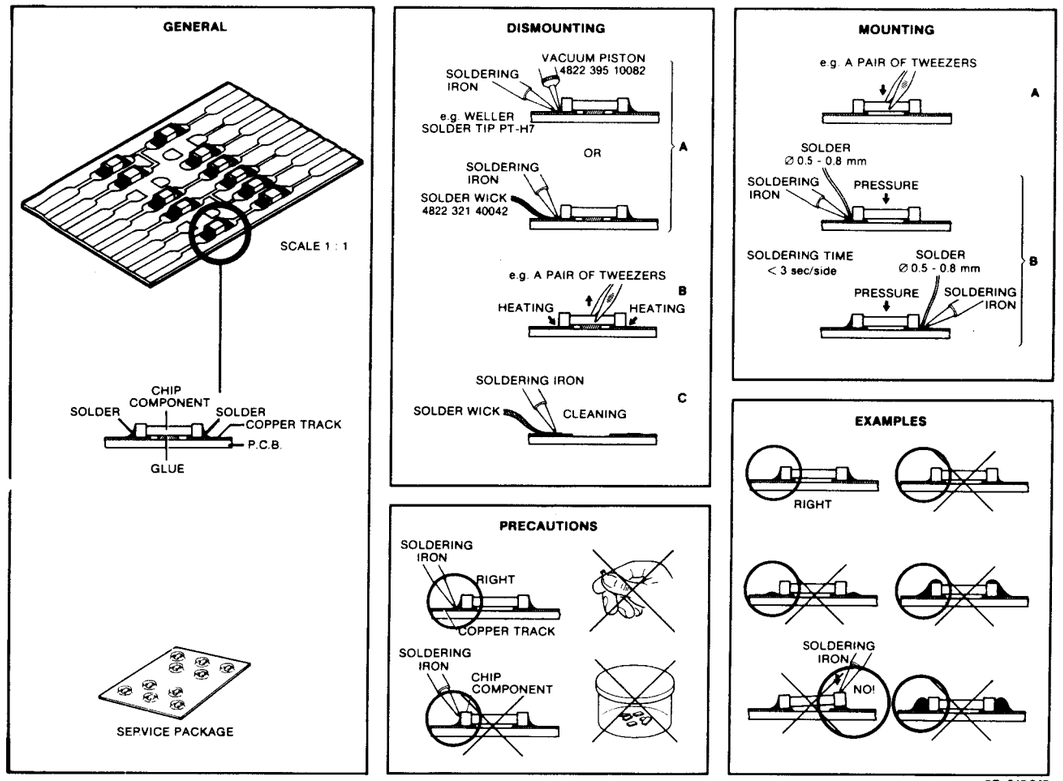




HAS.1048

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



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SERVICE TOOLS

Audio signal disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A	4822 397 30096
Disc (65 min 1kHz)without pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204

SERVICE HINT ABOUT PHOTOTRANSISTOR 7701

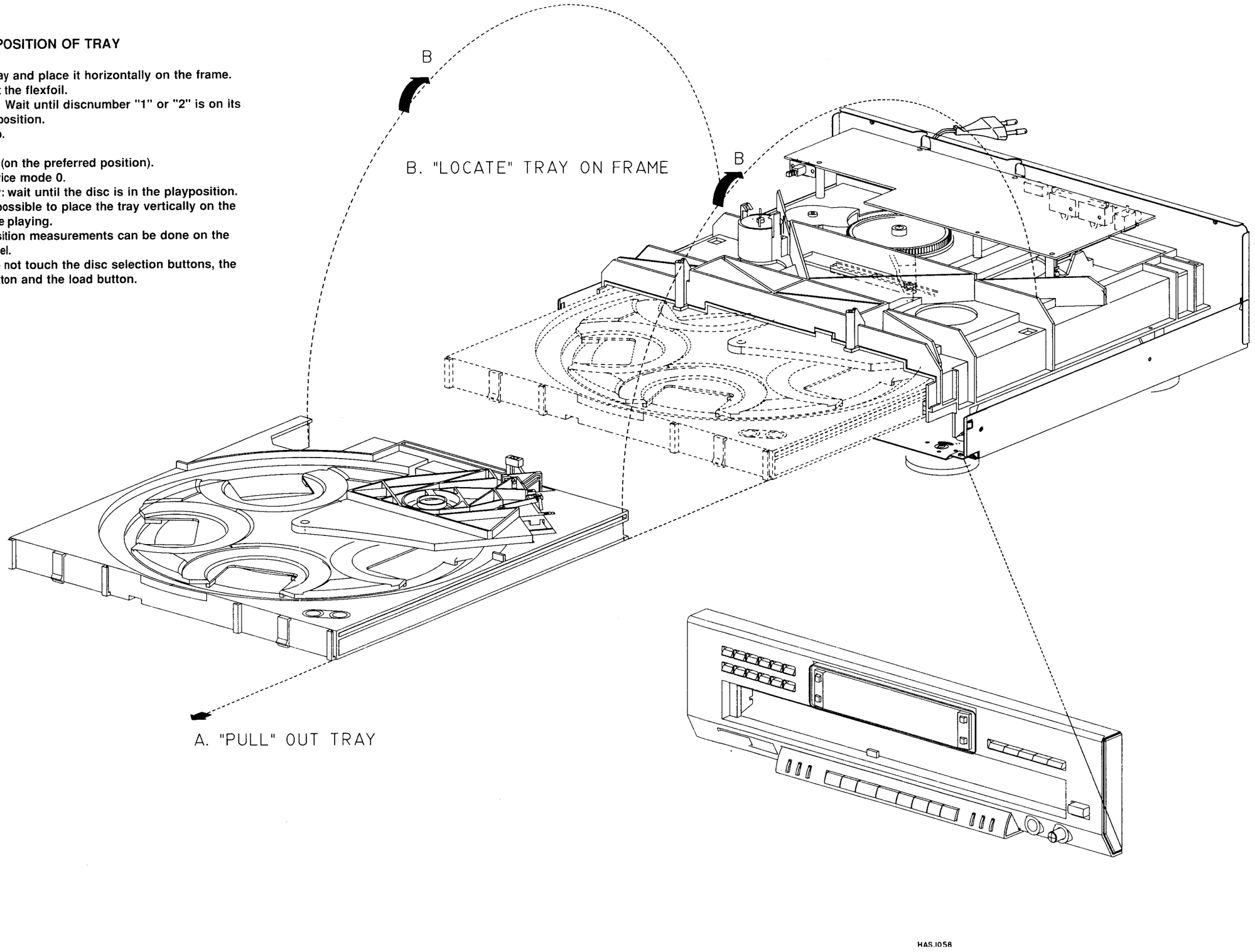
The disc detection does not work when the decoder panel is demounted and when external light falls on the phototransistor.
This can be prevented by covering the transistor with a piece of paper or a cloth.

12

SERVICING HINTS

SERVICE POSITION OF TRAY

- Pull out tray and place it horizontally on the frame.
- Reconnect the flexfoil.
- Power on. Wait until discnumber "1" or "2" is on its preferred position.
- Press stop.
- Power off.
- Load disc (on the preferred position).
- Go to service mode 0.
- Press play: wait until the disc is in the playposition.
- Now it is possible to place the tray vertically on the frame while playing.
- In this position measurements can be done on the Servo Panel.
  Please: do not touch the disc selection buttons, the shuffle button and the load button.

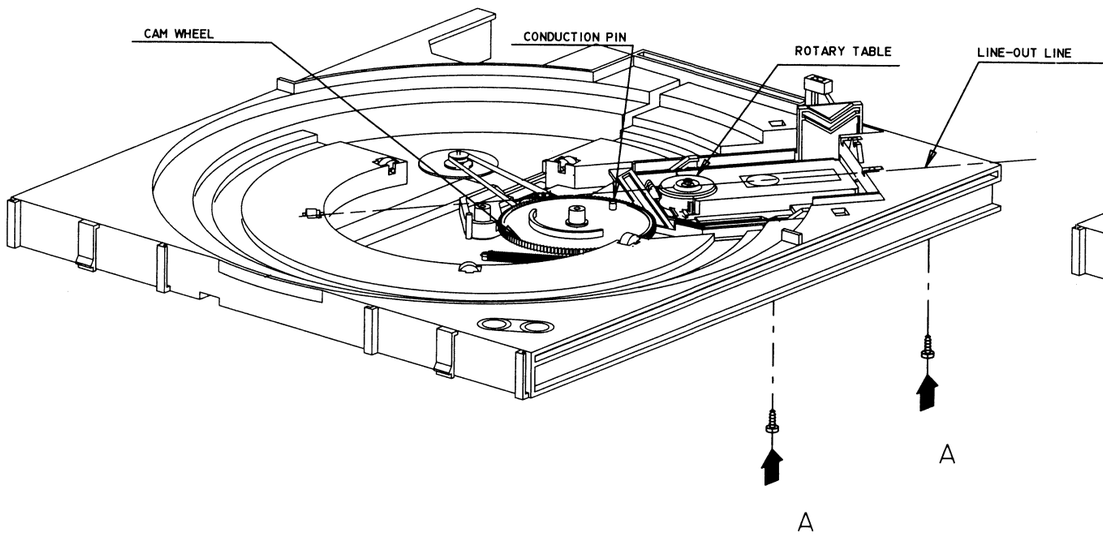


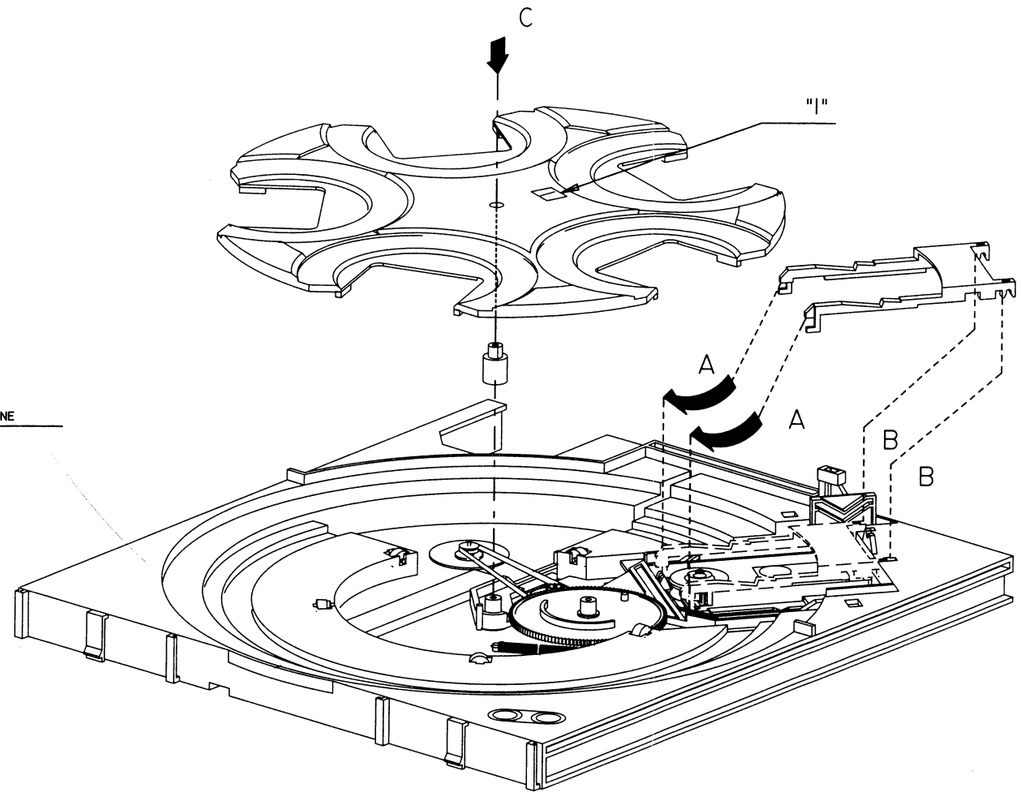
HAS.1058

13

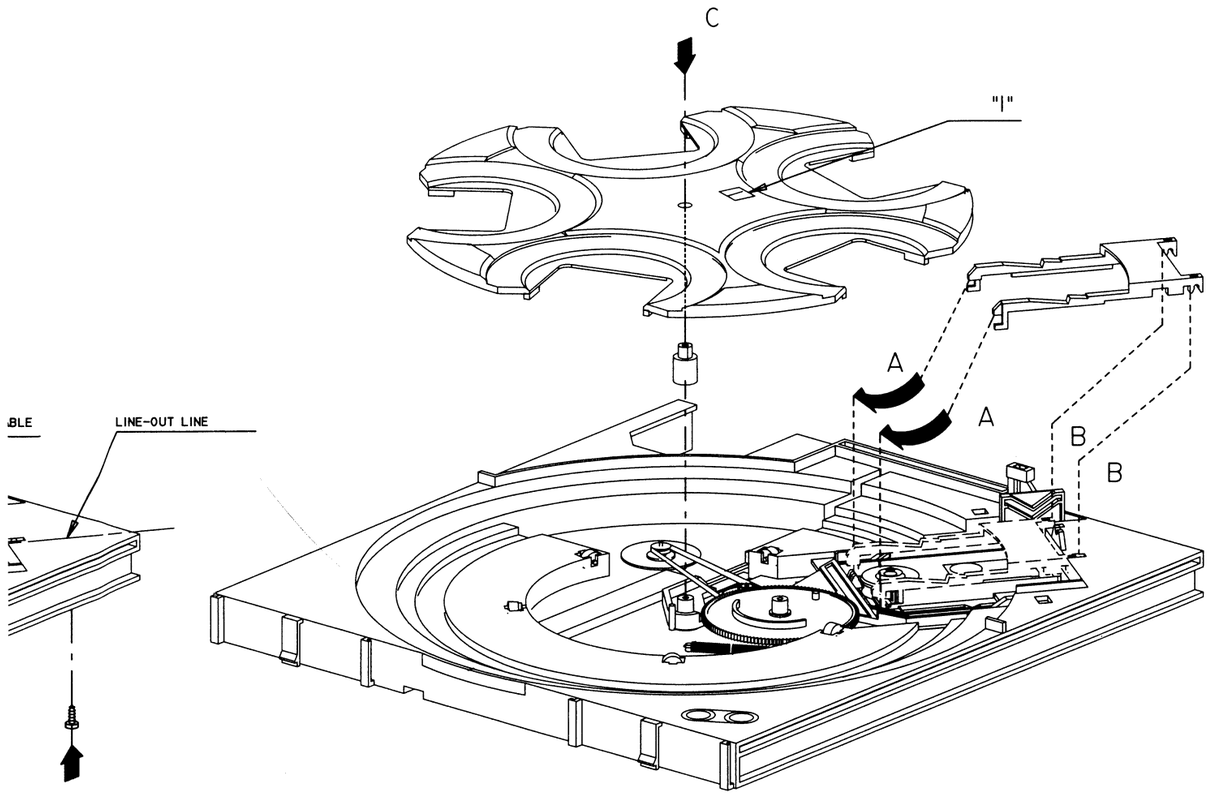
ASSEMBLY OF THE CARROUSEL

Turn camwheel (Exploded View item 116) until the conduction pin is in line with the rotary table of the CDM and the axis of the carrousel, or until the conduction pin is close to the CDM. The CDM is now in the highest position (Play position).
Mount the carrousel with the discnumber "1" to the CDM.





13

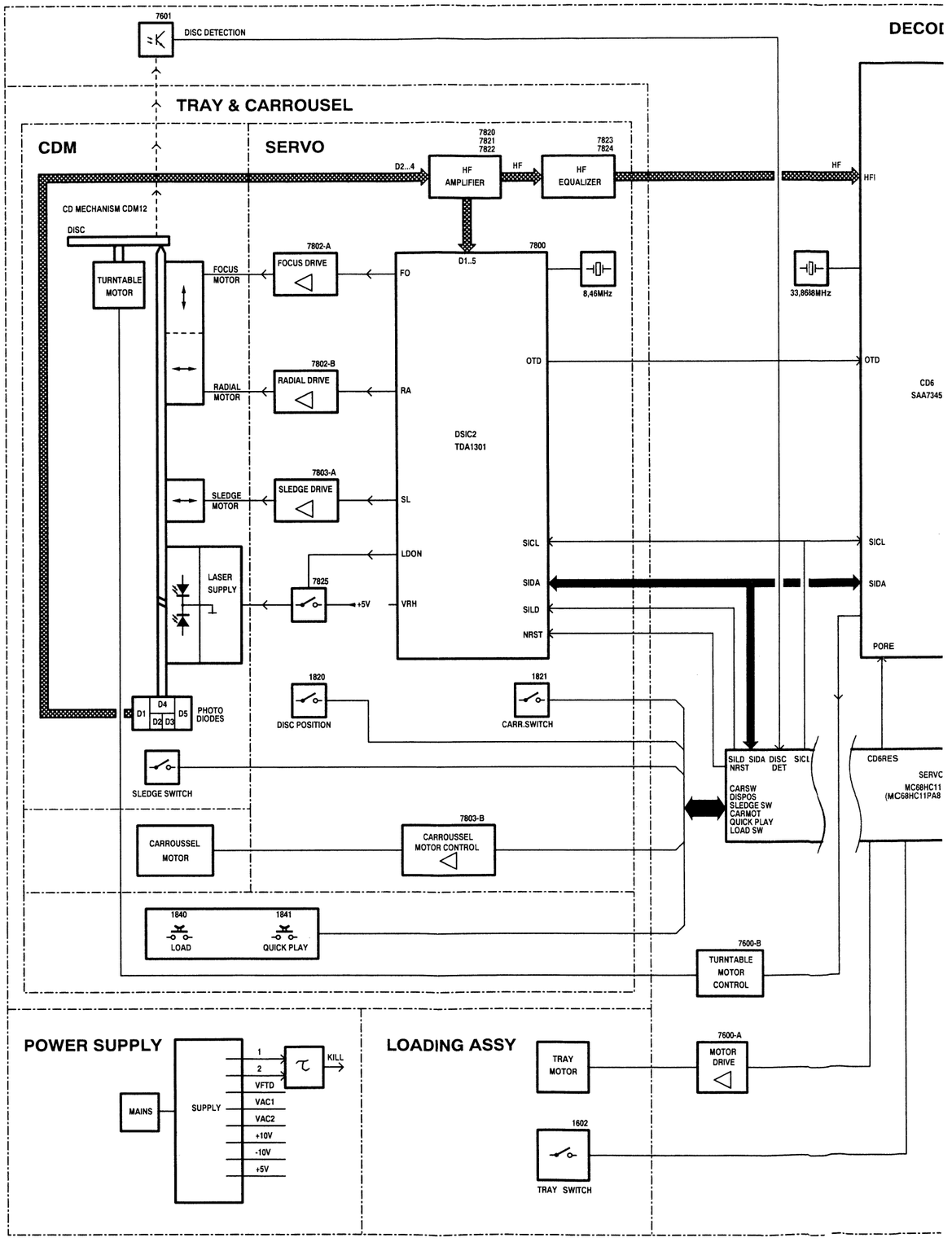


HAS.1059

ABBREVIATIONS

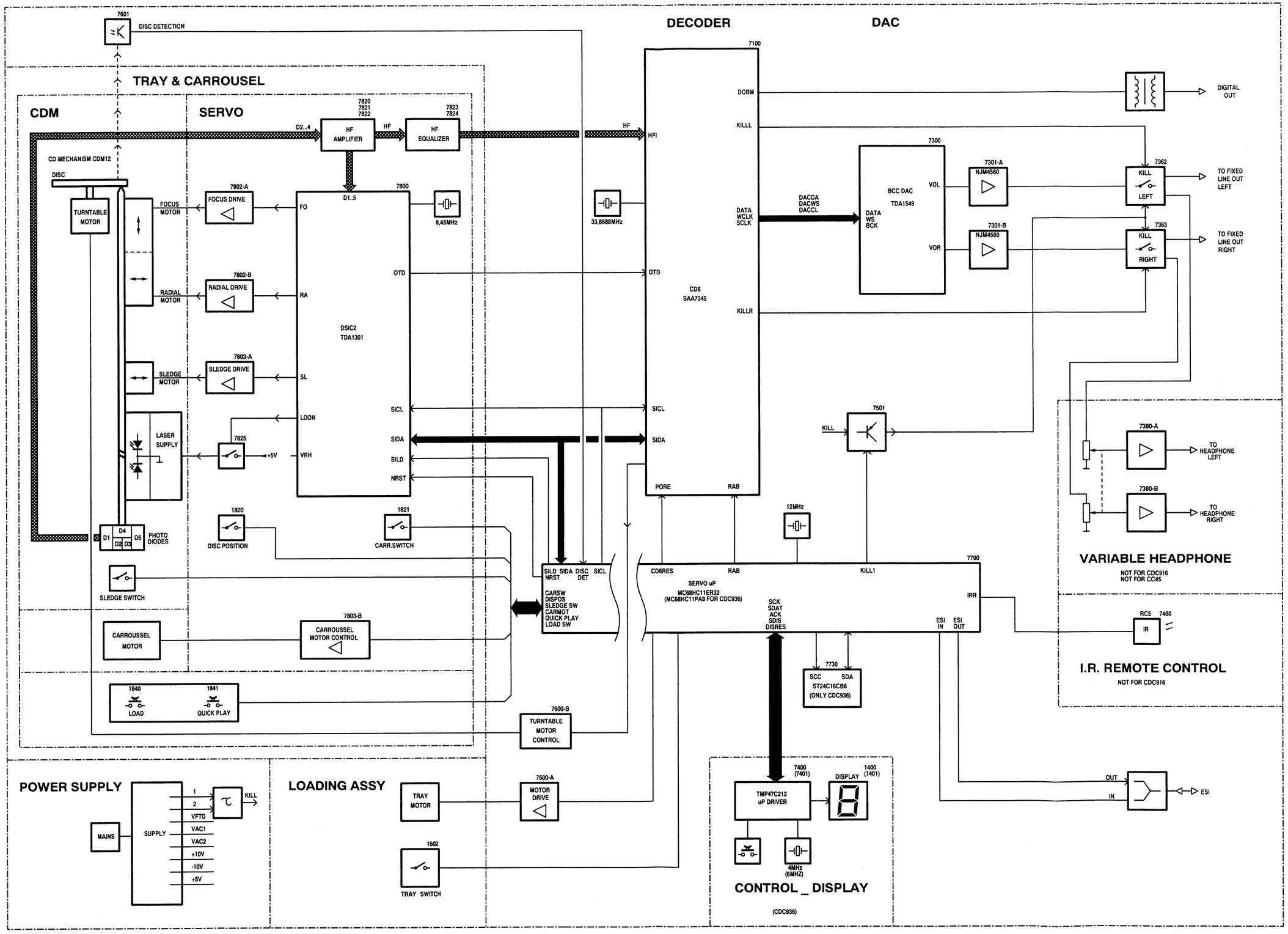
ACK	Acknowledge signal display(active LOW)
BCK	Bit clock input of BCC-DAC TDA1549
CARMOT	Carrousel motor
CARSW	Carrousel switch
CFLG	correction flag output
CL	interface clock input line
CL11	11.2896 MHz clock output
CL16	16.9344 MHz system clock output
CLA	4.2336 MHz microprocessor clock out put
CLO	Clock output
CRIN	crystal/resonator input
CROUT	crystal/resonator output
D1-D4	Central diode input of TDA1301
D1-D5	Photodiode signals from CDM12 mechanism
DA	interface data I/O line
DACCL	Bit clock output of CD6 decoder SAA7345
DACDA	Data output of CD6 decoder SAA7345
DACWS	Word select output of CD6 decoder SAA7345
DATA	serial data output/Data input of BCC-DAC TDA1549
DISPOS	Disc position
DISRES	RESET display
DOBM	Digital AUDIO output
ESI	Enhanced System Intelligence
FO	Focus actuator output
FOC+	+Connection of focus actuator
FOC-	Ground connection of focus actuator
HF	High-Frequency signal to decoder input
HFIN	comparator signal input
HFREF	comparator common-mode input
I.R.	Infra red receiver remote control
IREF	Reference current output
ISLICE	current feedback from data slicer
LDON	Laser drive on
LOAD SW	Load switch
MISC	general purpose DAC output
MOTO1,2	motor output 1,2
NRST	Reset input
OTD	Off track detector
PORE	power-on reset enable input(active low)
R1-R2	Satellite diode signal input
RA	Radial actuator output
RAB	interface R/W and acknowledge input
RAD+	+Connection of radial actuator
RAD-	Ground connection of radial actuator
SCK	CLOCK display
SCLK	serial bit clock output
SDAT	Serial data
SDAT0	DATAIN display
SDAT1	DATAOUT display
SDIS	Select display
SICL	Serial interface clock
SIDA	Serial interface data
SILD	Serial interface load
SL	Sledge output
SL OUT	+Connection of sledge motor
SLEDGE SW	Sledge switch of CDM12 mechanism
V1-5	Versatile input pins
VOL	Left channel output
VOR	Right channel output
WCLK	Word clock output
WS	Word select input of BCC-DAC TDA1549
XTLI	Oscillator input
XTLO	Oscillator output
XTLR	Oscillator reference

BLOCK DIAGRAM



14

BLOCK DIAGRAM



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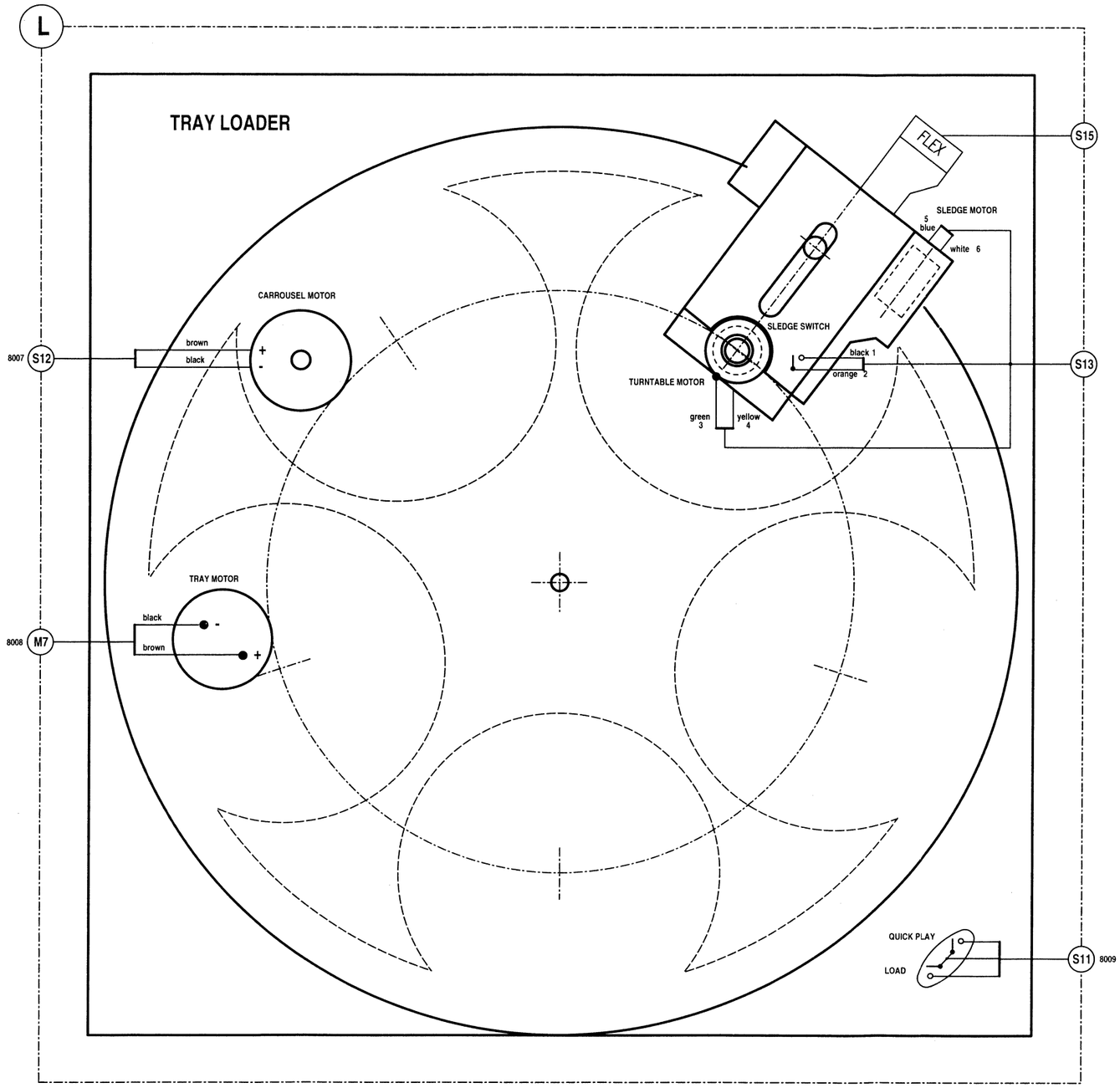
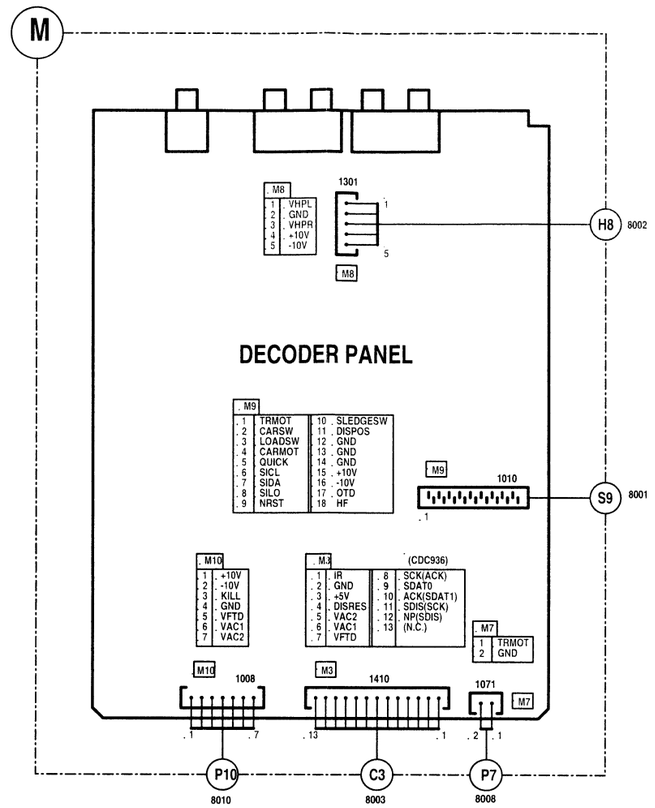
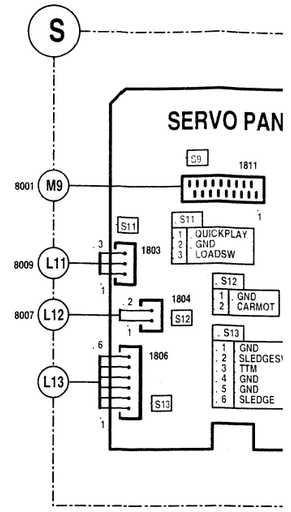
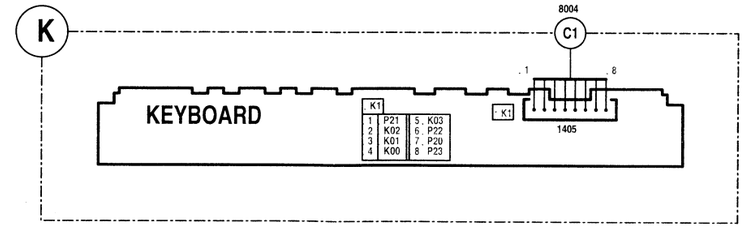
15

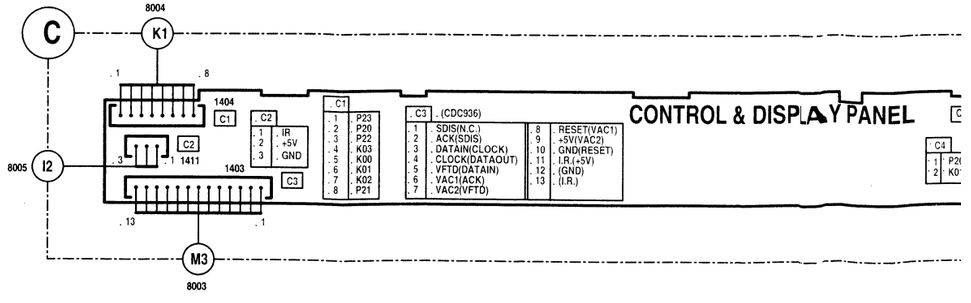
WIRING DIAGRAM



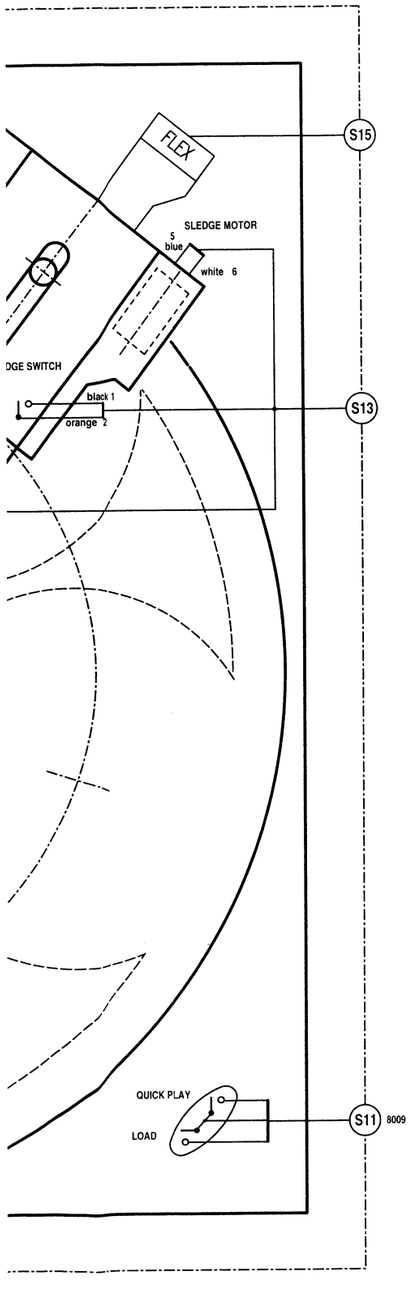


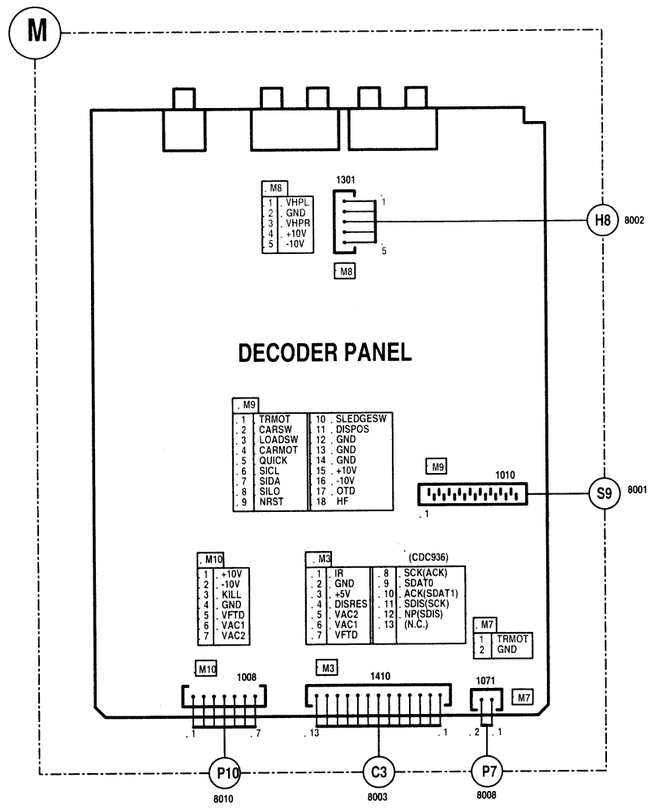


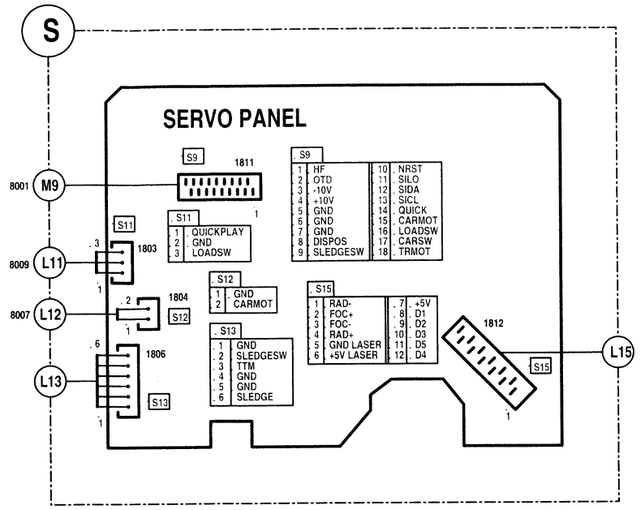


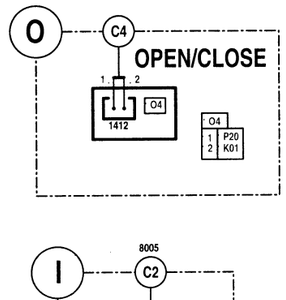


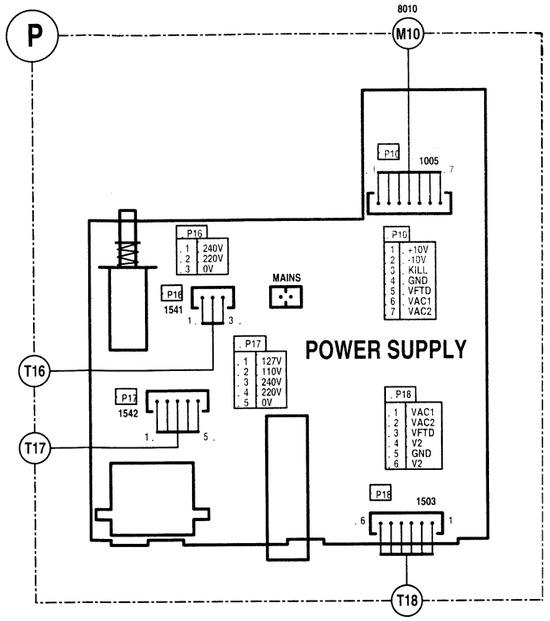
15

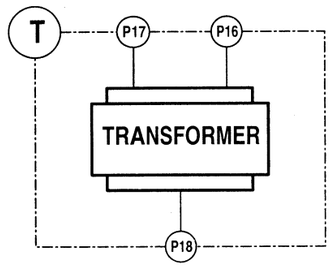


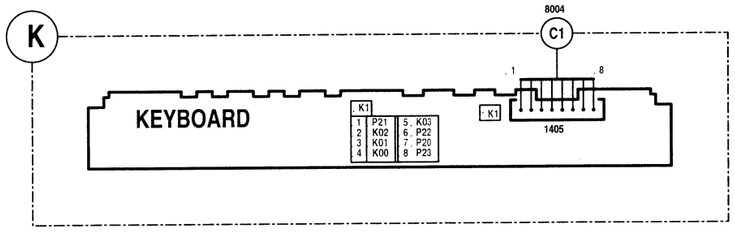


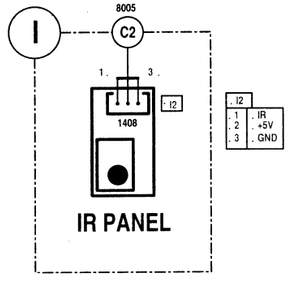


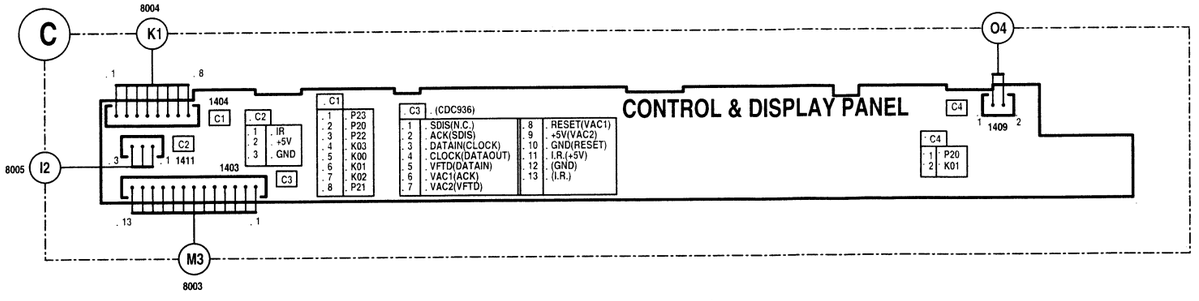


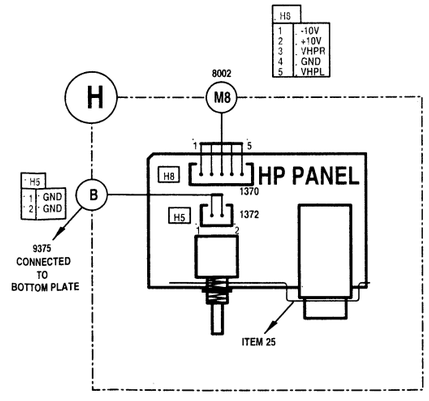












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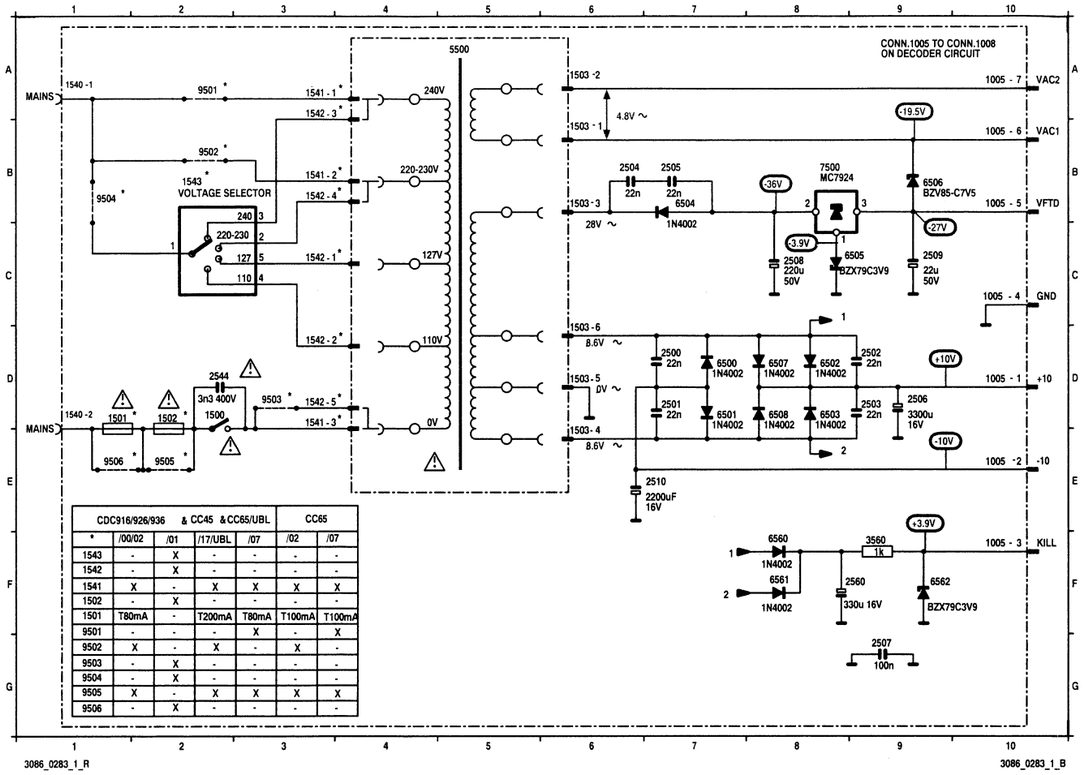
POWER SUPPLY CIRCUIT DIAGRAM

1005 D10 1005 B10 1503 B6 1503 D6 1541 D3 1542 D3 2503 D9 2508 C8 3560 F9 6503 D8 6508 D8 9501 A2 9506 E1
1005 E10 1005 A10 1503 A6 1540 A1 1542 C3 1542 B2 2504 B6 2509 C9 3999 F6 6504 B7 6560 F8 9502 B2
1005 F10 1500 D2 1503 B6 1540 D1 1542 D3 2500 D7 2505 B7 2510 E7 6500 D7 6505 C9 6561 F8 9503 D3
1005 C10 1501 D1 1503 E6 1541 A3 1542 A3 2501 D7 2506 D9 2544 D2 6501 D7 6506 E9 6562 F9 9504 B1
1005 B10 1502 D2 1503 D6 1541 B3 1542 B3 2502 D9 2507 G9 2560 F9 6502 D8 6507 D8 7500 B8 9505 E2

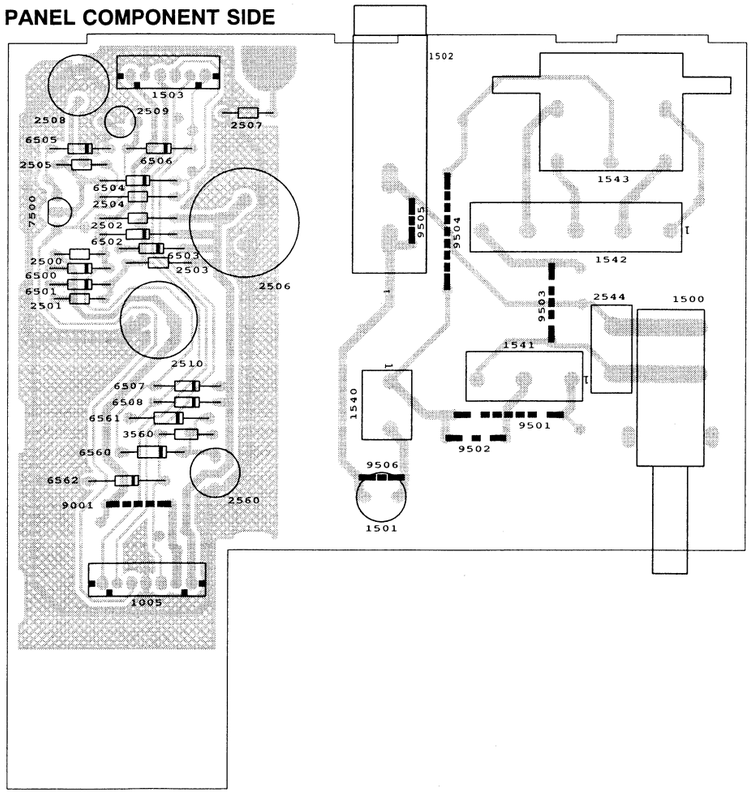


CDC916/926/936 & CC45 & CC65/UBL					CC65	
*	/00/02	/01	/17/UBL	/07	/02	/07
1543	-	X	-	-	-	-
1542	-	X	-	-	-	-
1541	X	-	X	X	X	X
1502	-	X	-	-	-	-
1501	T80mA	-	T200mA	T80mA	T100mA	T100mA
9501	-	-	-	X	-	X
9502	X	-	X	-	X	-
9503	-	X	-	-	-	-
9504	-	X	-	-	-	-
9505	X	-	X	X	X	X
9506	-	X	-	-	-	-

3086_0283_1_R

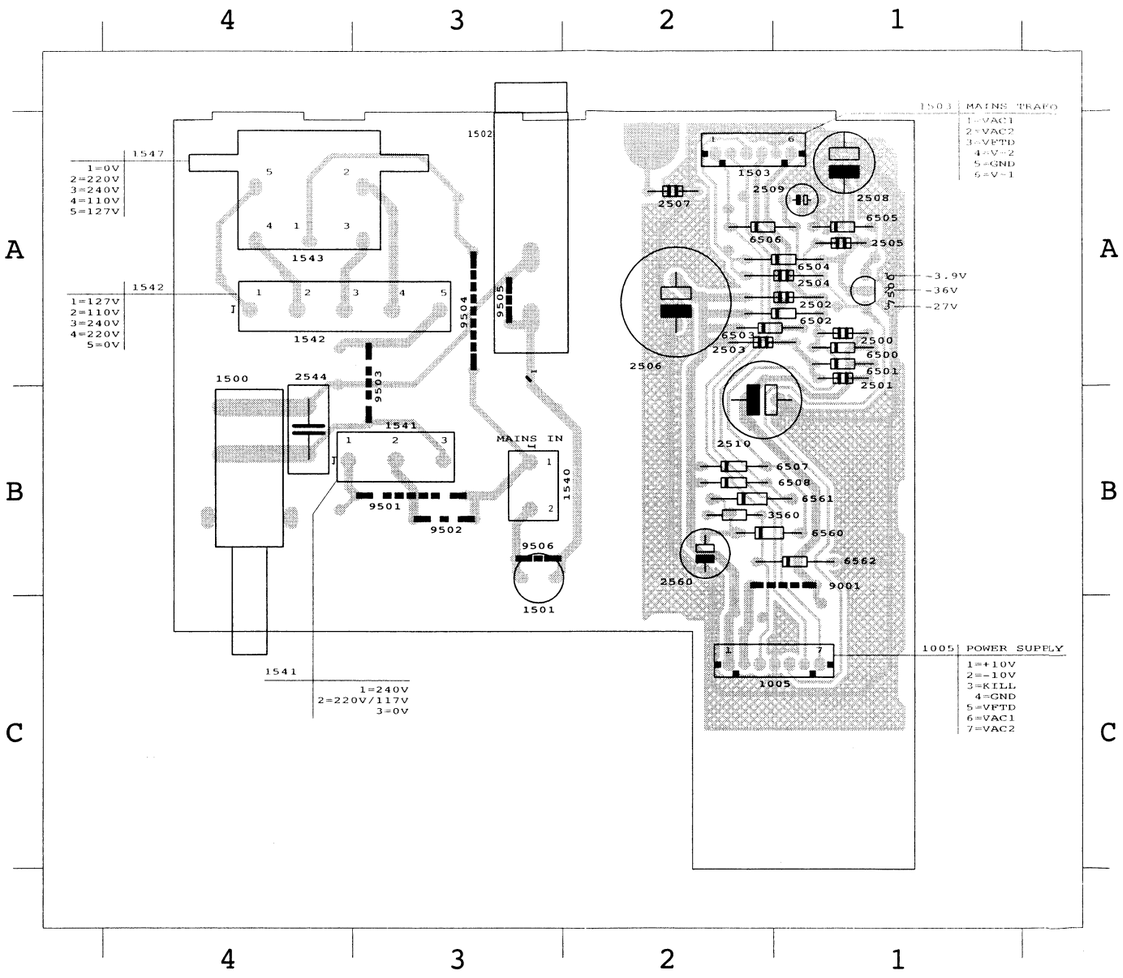
3086_0283_1_B

POWER SUPPLY PANEL COMPONENT SIDE



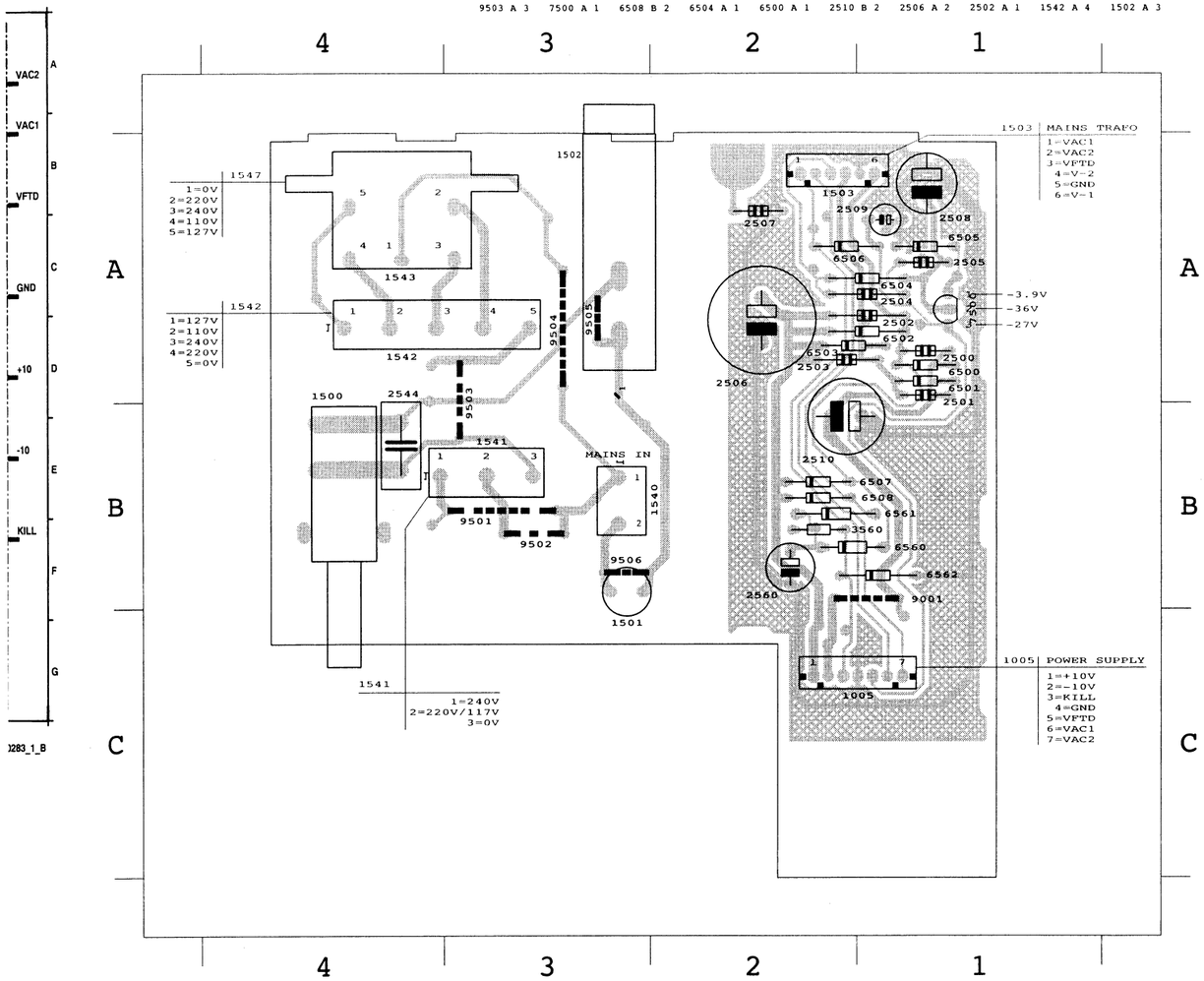
POWER SUPPLY PANEL SOLDER SIDE

9504 A 3 9001 B 1 6560 B 2 6505 A 1 6501 A 1 2544 B 4 2507 A 2 2503 A 2 1543 A 4 1503 A 2 1005 C 1
9505 A 3 9501 B 3 6561 B 2 6506 A 2 6502 A 1 2560 B 2 2508 A 1 2504 A 1 2500 A 1 1540 B 3 1500 B 4
9506 B 3 9502 B 3 6562 B 1 6507 B 2 6503 A 2 3560 B 2 2509 A 1 2505 A 1 2501 A 1 1541 B 3 1501 B 3
9503 A 3 7500 A 1 6508 B 2 6504 A 1 6500 A 1 2510 B 2 2506 A 2 2502 A 1 1542 A 4 1502 A 3



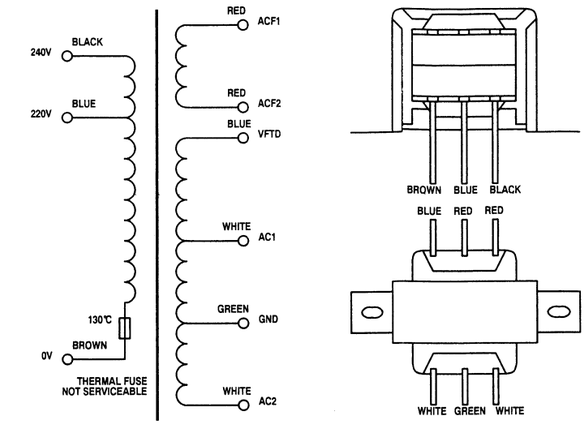
POWER SUPPLY PANEL SOLDER SIDE

9504 A 3	9001 B 1	6560 B 2	6505 A 1	6501 A 1	2544 B 4	2507 A 2	2503 A 2	1543 A 4	1503 A 2	1005 C 1
9505 A 3	9501 B 3	6561 B 2	6506 A 2	6502 A 1	2560 B 2	2508 A 1	2504 A 1	2500 A 1	1540 B 3	1500 B 4
9506 B 3	9502 B 3	6562 B 1	6507 B 2	6503 A 2	3560 B 2	2509 A 1	2505 A 1	2501 A 1	1541 B 3	1501 B 3
	9503 A 3	7500 A 1	6508 B 2	6504 A 1	6500 A 1	2510 B 2	2506 A 2	2502 A 1	1542 A 4	1502 A 3

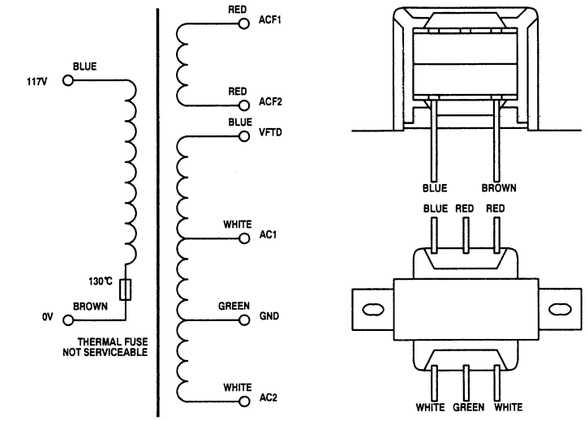


TRANSFORMER CONNECTIONS

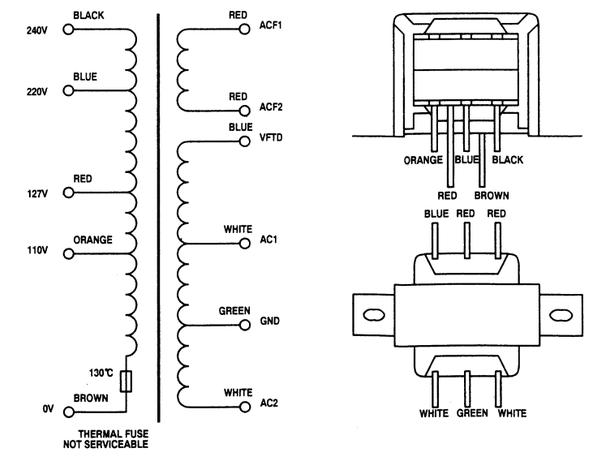
/00 /02 /07 VERSIONS



/17 VERSIONS

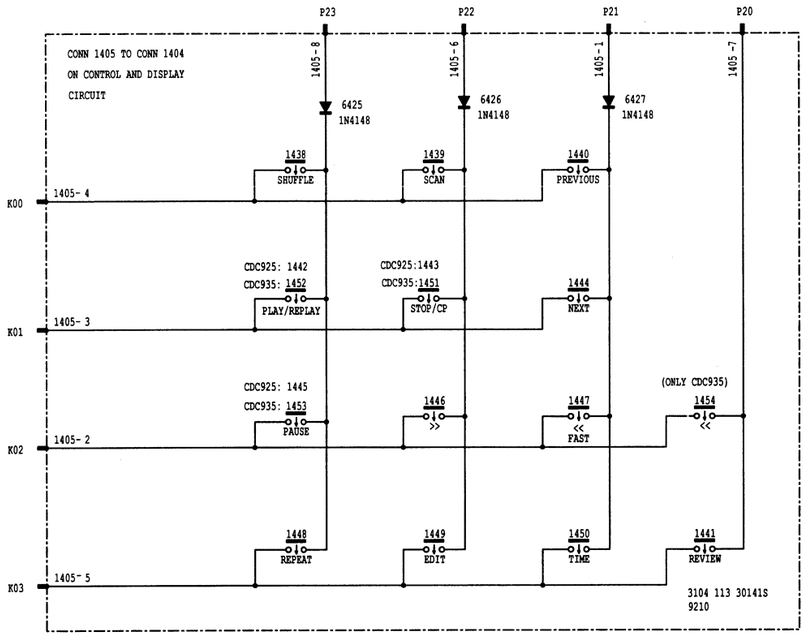


/01 VERSIONS



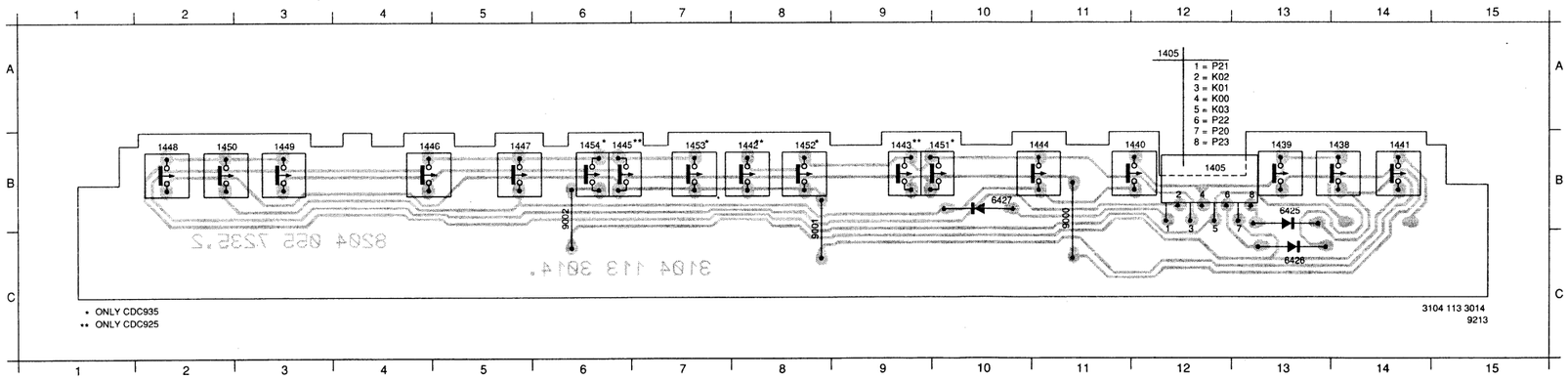
17

KEYBOARD CIRCUIT DIAGRAM



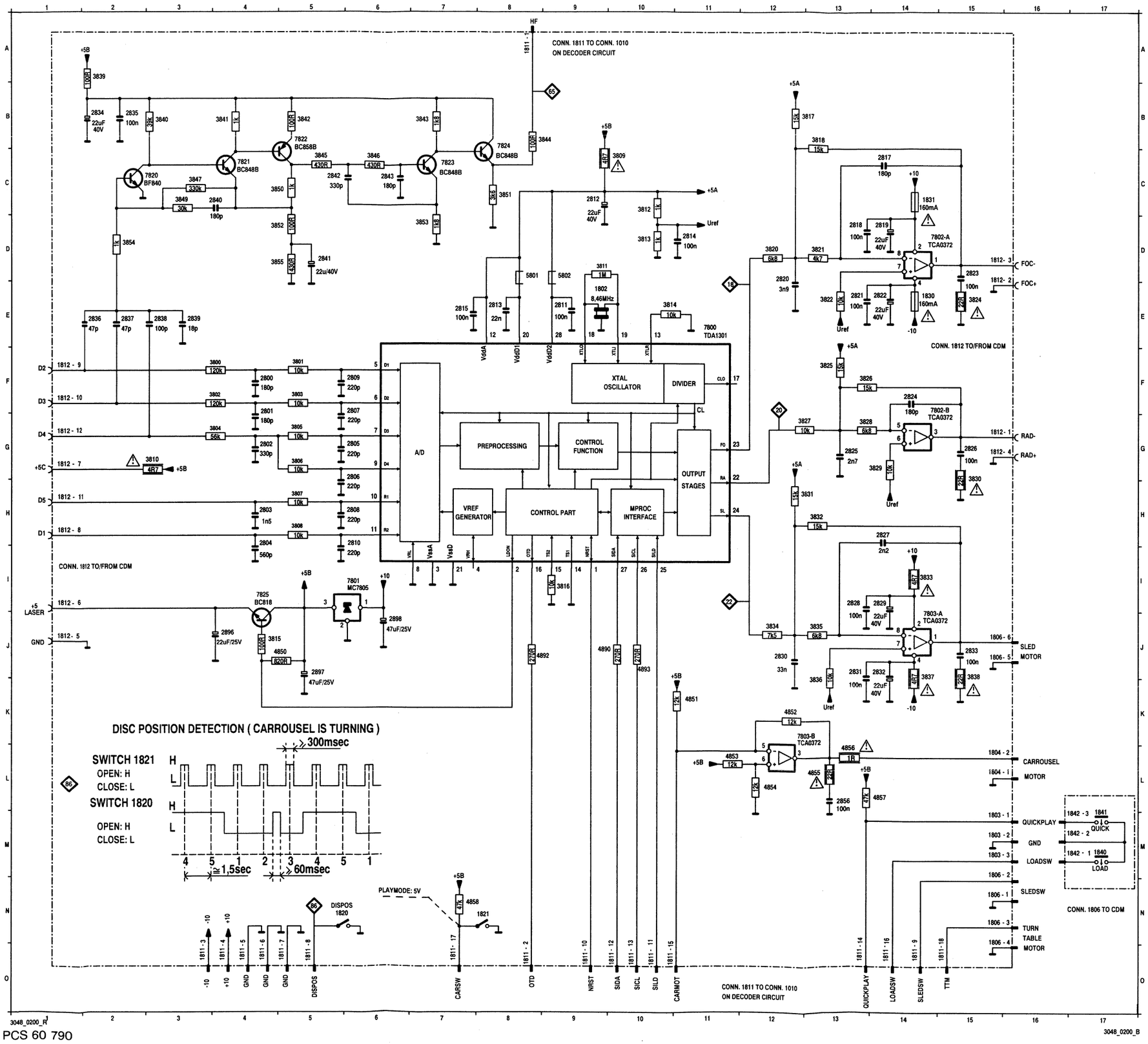
KEYBOARD PANEL

1405	B12	1439	B13	1441	B14	1443	B9	1445	B6	1447	B5	1449	B3	1451	B9	1453	B7	6425	B13	6427	B10	9001	C8
1438	B13	1440	B11	1442	B8	1444	B10	1446	B4	1448	B2	1450	B2	1452	B8	1454	B6	6426	C13	9000	B11	9002	B6

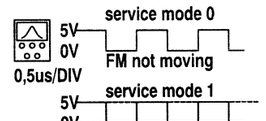


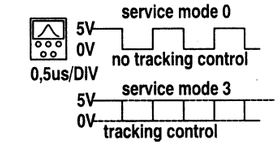
SERVO CIRCUIT DIAGRAM

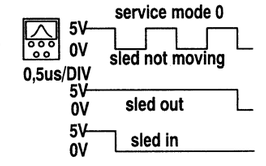
18

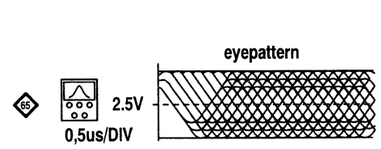


1802 E 9 4892 J 9
1803 M15 4893 J10
1803 L15 5801 D 8
1803 M15 5802 D 9
1804 L15 7800 E11
1804 L15 7801 I 6
1806 N15 7802- D14
1806 N15 7802- F14
1806 N15 7803- J14
1806 J15 7803- K12
1806 M15 7820 C 2
1806 J15 7821 C 4
1811 O 4 7822 B 5
1811 O 4 7823 C 7
1811 O 5 7824 B 8
1811 O14 7825 I 4
1811 O10
1811 O 3
1811 O 4
1811 O 7
1811 O14
1811 O14
1811 O 5
1811 O13
1811 O 8
1811 O 9
1811 O10
1811 A 8
1811 O10
1811 O 9
1812 H 1
1812 G 1
1812 I 1
1812 F 1
1812 D15
1812 G15
1812 G15
1812 D15
1812 G 1
1812 H 1
1812 J 1
1812 F 1
1820 N 5
1821 N 8
1830 E14
1831 C14
1840 M17
1841 M17
1842 M17
1842 M17
1842 M17
2800 F 4
2801 G 4
2802 G 4
2803 H 4
2804 H 4
2805 G 6
2806 G 6
2807 F 6
2808 H 6
2809 F 6
2810 H 6
2811 E 9
2812 C 9
2813 E 8
2814 D11
2815 E 7
2817 C14
2818 D13
2819 D14
2820 D12
2821 E13
2822 E14
2823 D15
2824 F14
2825 G13
2826 G15
2827 H14
2828 I13
2829 I14
2830 J12
2831 J13
2832 J14
2833 J15
2834 B 2
2835 B 2
2836 E 2
2837 E 2
2838 E 3
2839 E 3
2840 C 4
2841 D 5
2842 C 5
2843 C 6
2856 L13
2896 J 4
2897 J 5
2898 J 6
3800 F 4
3801 F 5
3802 F 4
3803 F 5
3804 G 4
3805 G 5
3806 G 5
3807 H 5
3808 H 5
3809 C10
3810 G 3
3811 D 9
3812 C10
3813 D10
3814 E10
3815 J 4
3816 I 9
3817 B13
3818 B13
3820 D12
3821 D13
3822 E13
3824 E15
3825 F13
3826 F13
3827 G13
3828 G13
3829 G14
3830 H15
3831 H13
3832 H13
3833 I14
3834 J12
3835 J13
3836 K13
3837 K14
3838 J15
3839 A 2
3840 B 3
3841 B 4
3842 B 5
3843 B 7
3844 B 9
3845 C 5
3846 C 6
3847 C 3
3849 C 3
3850 C 5
3851 C 8
3852 D 5
3853 D 7
3854 D 2
3855 D 5
4850 J 5
4851 K11
4852 K12
4853 L11
4854 L12
4855 L13
4856 L13
4857 L14
4858 N 7
4890 J 9



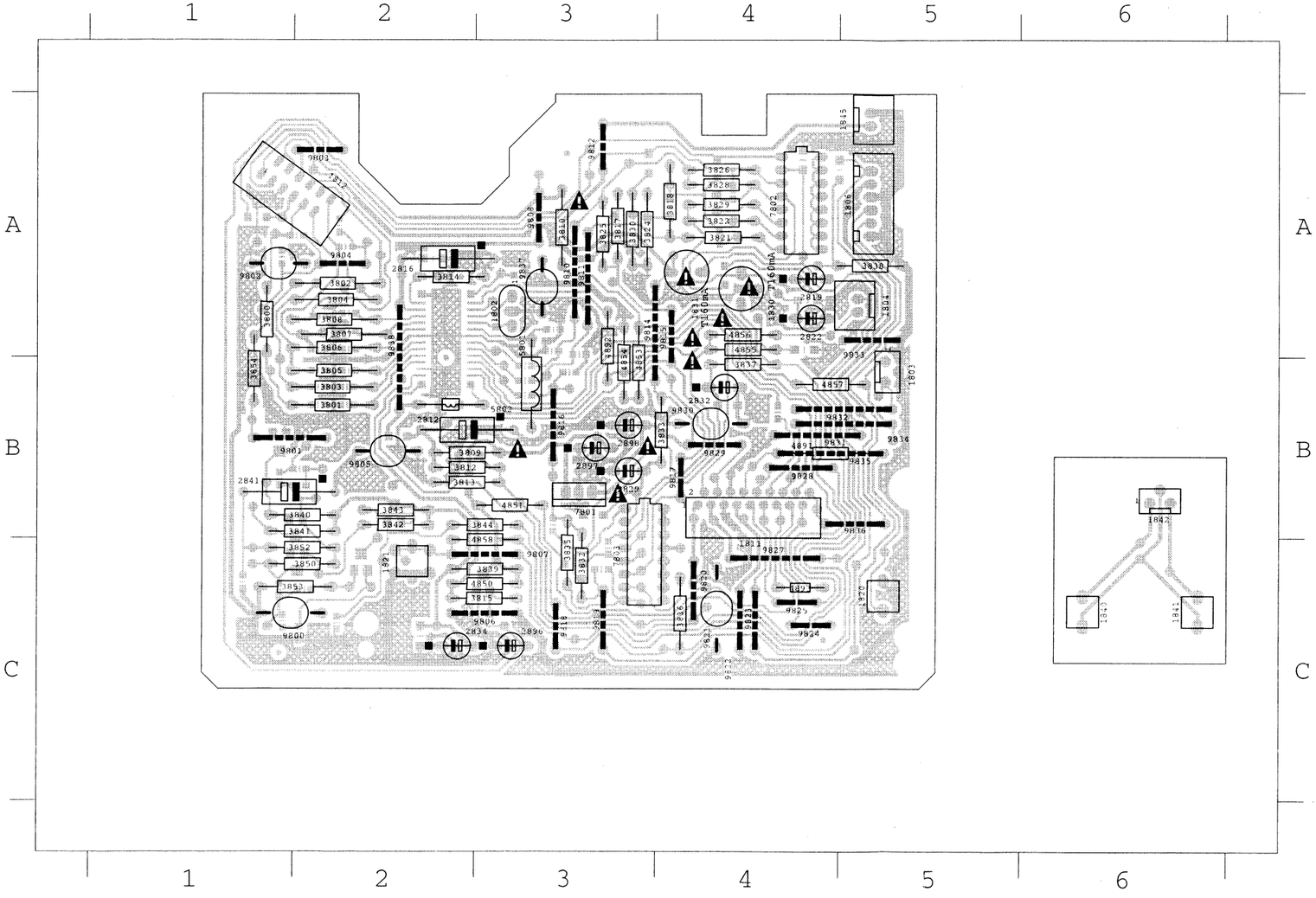






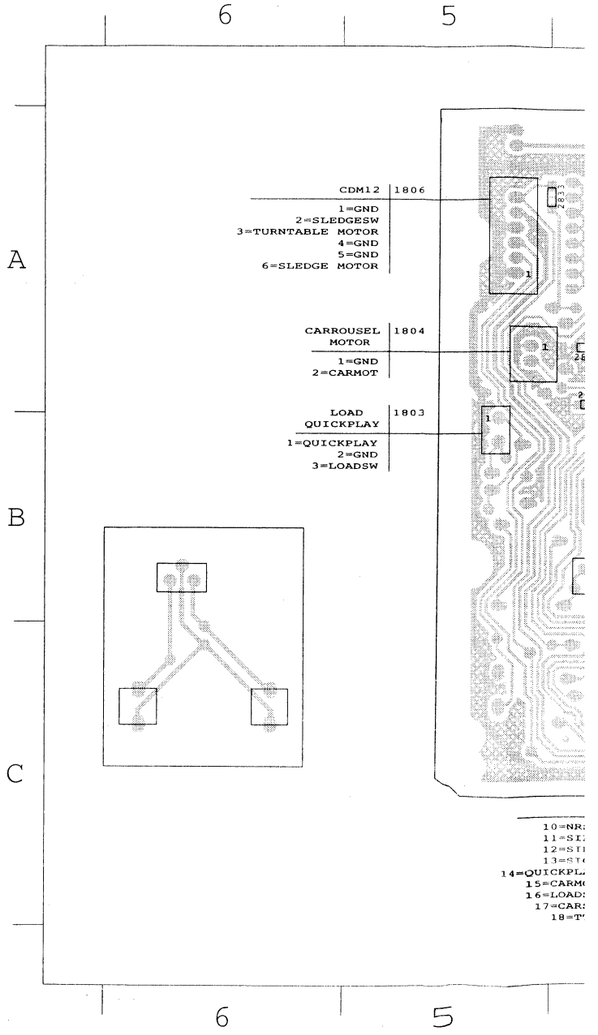
SERVO PANEL
COMPONENT SIDE

1802 A 3 1845 A 5 2809 B 2 2819 A 4 2829 B 3 2839 A 1 3801 B 2 3811 A 3 3822 A 4 3833 B 4 3843 B 2 3854 B 1 4858 C 3 4899 A 4 7823 C 2 9807 C 3 9819 C 3 9830 B 4 1840 C 6
1803 B 5 2800 B 2 2810 A 2 2820 A 3 2830 B 3 2840 B 2 3802 A 2 3812 B 2 3824 A 3 3834 B 3 3844 B 3 3855 C 1 4890 B 4 5801 B 3 7824 B 2 9808 A 3 9820 C 4 9831 B 4 1841 C 6
1804 A 5 2801 B 2 2811 B 2 2821 A 4 2831 B 4 2841 B 1 3803 B 2 3813 B 2 3825 A 3 3835 C 3 3845 C 1 4850 C 3 4891 B 4 5802 B 2 7825 C 3 9810 A 3 9821 C 4 9832 B 5 1842 B 6
1806 A 5 2802 B 2 2812 B 2 2822 A 4 2832 B 4 2842 C 2 3804 A 2 3814 A 2 3826 A 4 3836 C 4 3846 C 1 4851 B 3 4892 A 3 7800 A 2 9800 C 1 9811 A 3 9822 C 4 9833 A 5
1811 B 4 2803 A 2 2813 A 3 2823 A 4 2833 A 4 2843 C 2 3805 B 2 3815 C 1 3827 B 3 3837 B 4 3847 B 1 4852 C 3 4893 C 4 7801 B 3 9801 B 1 9812 A 3 9823 C 4 9834 B 5
1812 A 1 2804 A 2 2814 B 2 2824 A 4 2834 C 2 2856 A 4 3806 A 2 3816 A 1 3828 A 4 3838 A 5 3849 B 2 4853 B 3 4894 B 2 7802 A 4 9802 A 1 9814 A 3 9824 C 4 9835 B 4
1820 C 5 2805 B 2 2815 A 2 2825 A 3 2835 C 2 2896 C 3 3807 A 2 3817 A 3 3829 A 4 3839 C 3 3850 C 2 4854 B 3 4895 A 1 7803 B 3 9803 A 2 9815 A 4 9825 C 4 9836 B 5
1821 C 2 2806 A 2 2816 A 2 2826 A 3 2836 A 2 2897 B 3 3808 A 2 3818 A 4 3830 A 3 3840 B 2 3851 C 2 4855 A 4 4896 B 2 7820 B 1 9804 A 2 9816 B 3 9827 C 4 9837 A 3
1830 A 4 2807 B 2 2817 A 4 2827 C 3 2837 A 2 2898 B 3 3809 B 2 3820 B 3 3831 B 3 3841 B 2 3852 C 2 4856 A 4 4897 C 3 7821 B 2 9805 B 2 9817 B 4 9828 B 4 9838 B 2
1831 A 4 2808 A 2 2818 A 4 2828 B 3 2838 A 2 3800 A 1 3810 A 3 3821 A 4 3822 C 3 3842 B 2 3853 C 2 4857 B 4 4898 A 4 7822 C 2 9806 C 3 9818 C 3 9829 B 4 - - - -



SOLDER SIDE

1840 C 6 9830 B 4 9819 C 3 9807 C 3 7823 C 2 4899 A 4 48
1841 C 6 9831 B 4 9820 C 4 9808 A 3 7824 B 2 5801 B 3 48
1842 B 6 9832 B 5 9821 C 4 9810 A 3 7825 C 3 5802 B 2 48
9833 A 5 9822 C 4 9811 A 3 9800 C 1 7800 A 2 48
9834 B 5 9823 C 4 9812 A 3 9801 B 1 7801 B 3 48
9835 B 4 9824 C 4 9813 A 3 9802 A 1 7802 A 4 48
9836 B 5 9825 C 4 9815 A 4 9803 A 2 7803 B 3 48
9837 A 3 9827 C 4 9816 B 3 9804 A 2 7820 B 1 48
9838 B 2 9828 B 4 9817 B 4 9805 B 2 7821 B 2 48
- - - - 9829 B 4 9818 C 3 9806 C 3 7822 C 2 48



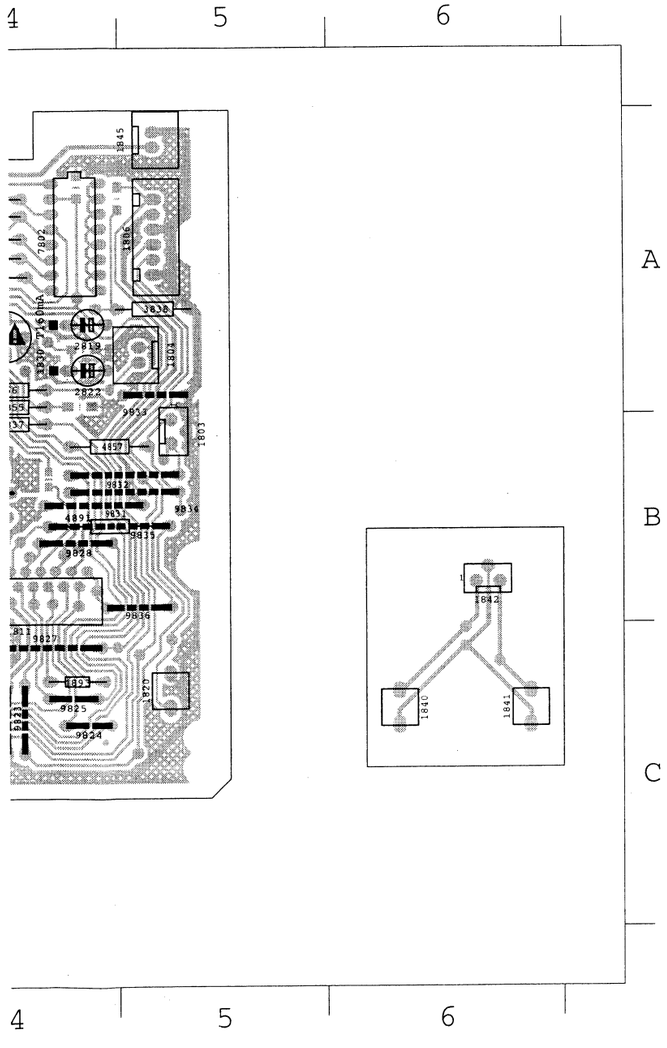
19

SOLDER SIDE

3 1	4858 C 3	4899 A 4	7823 C 2	9807 C 3	9819 C 3	9830 B 4	1840 C 6		
: 1	4890 B 4	5801 B 3	7824 B 2	9808 A 3	9820 C 4	9831 B 4	1841 C 6		
: 3	4891 B 4	5802 B 2	7825 C 3	9810 A 3	9821 C 4	9832 B 5	1842 B 6		
3 3	4892 A 3	7800 A 2	9800 C 1	9811 A 3	9822 C 4	9833 A 5			
: 3	4893 C 4	7801 B 3	9801 B 1	9812 A 3	9823 C 4	9834 B 5			
3 3	4894 B 2	7802 A 4	9802 A 1	9814 A 3	9824 C 4	9835 B 4			
3 3	4895 A 1	7803 B 3	9803 A 2	9815 A 4	9825 C 4	9836 B 5			
\ 4	4896 B 2	7820 B 1	9804 A 2	9816 B 3	9827 C 4	9837 A 3			
\ 4	4897 C 3	7821 B 2	9805 B 2	9817 B 4	9828 B 4	9838 B 2			
3 4	4898 A 4	7822 C 2	9806 C 3	9818 C 3	9829 B 4	----			

1840 C 6	9830 B 4	9819 C 3	9807 C 3	7823 C 2	4899 A 4	4858 C 3	3854 B 1	3843 B 2	3833 B 4
1841 C 6	9831 B 4	9820 C 4	9808 A 3	7824 B 2	5801 B 3	4890 B 4	3855 C 1	3844 B 3	3834 B 3
1842 B 6	9832 B 5	9821 C 4	9810 A 3	7825 C 3	5802 B 2	4891 B 4	3850 C 3	3845 C 1	3835 C 3
	9833 A 5	9822 C 4	9811 A 3	9800 C 1	7800 A 2	4892 A 3	4851 B 3	3846 C 1	3836 C 4
	9834 B 5	9823 C 4	9812 A 3	9801 B 1	7801 B 3	4893 C 4	4852 C 3	3847 B 1	3837 B 4
	9835 B 4	9824 C 4	9814 A 3	9802 A 1	7802 A 4	4894 B 2	4853 B 3	3849 B 2	3838 A 5
	9836 B 5	9825 C 4	9815 A 4	9803 A 2	7803 B 3	4895 A 1	4854 B 3	3850 C 2	3839 C 3
	9837 A 3	9827 C 4	9816 B 3	9804 A 2	7820 B 1	4896 B 2	4855 A 4	3851 C 2	3840 B 2
	9838 B 2	9828 B 4	9817 B 4	9805 B 2	7821 B 2	4897 C 3	4856 A 4	3852 C 2	3841 B 2
	----	9829 B 4	9818 C 3	9806 C 3	7822 C 2	4898 A 4	4857 B 4	3853 C 2	3842 B 2

3822 A 4	3811 A 3	3801 B 2	2839 A 1	2829 B 3	2819 A 4	2809 B 2	1845 A 5	1802 A 3	
3824 A 3	3812 B 2	3802 A 2	2840 B 2	2830 B 3	2820 A 3	2810 A 2	2800 B 2	1803 B 5	
3825 A 3	3813 B 2	3803 B 2	2841 B 1	2831 B 4	2821 A 4	2811 B 2	2801 B 2	1804 A 5	
3826 A 4	3814 A 2	3804 A 2	2842 C 2	2832 B 4	2822 A 4	2812 B 2	2802 B 2	1806 A 5	
3827 B 3	3815 C 3	3805 B 2	2843 C 2	2833 A 4	2823 A 4	2813 A 3	2803 A 2	1811 B 4	
3828 A 4	3816 A 3	3806 A 2	2856 A 4	2834 C 2	2824 A 4	2814 B 2	2804 A 2	1812 A 1	
3829 A 4	3817 A 3	3807 A 2	2896 C 3	2835 C 2	2825 A 3	2815 A 2	2805 B 2	1820 C 5	
3830 A 3	3818 A 4	3808 A 2	2897 B 3	2836 A 2	2826 A 3	2816 A 2	2806 A 2	1821 C 2	
3831 B 3	3820 B 3	3809 B 2	2898 B 3	2837 A 2	2827 C 3	2817 A 4	2807 B 2	1830 A 4	
3832 C 3	3821 A 4	3810 A 3	3800 A 1	2838 A 2	2828 B 3	2818 A 4	2808 A 2	1831 A 4	



DECODER CIRCUIT DIAGRAM

20

DISC POSITION DETECTION (CARROUSEL IS TURNING)

CONN. 1008 FROM CONN. 1005 ON POWER SUPPLY CIRCUIT

CARSW 1821 H / L
OPEN: H
CLOSE: L

DISPOS 1820 H / L
OPEN: H
CLOSE: L

300msec
≅1,5sec
60msec

KILL 1008 - 3

7501 BC858

TO D6360, D6361 ON DAC CIRCUIT

KILL1
0V IN STOP PAUSE
-8V IN PLAY MODE

DISC DETECTION
7601 BPW85A

DISC POSITION DETECTION(CARROUSEL TURNING)
LOW PULSE WHEN NO DISC IS PRESENT

CONN. 1010 TO CONN. 1811 ON SERVO CIRCUIT

ACTIVITY IN PLAY MODE

CARSW 1010 - 2
QUICK PLAY 1010 - 5
SILD 1010 - 8
NRST 1010 - 9
CARMOT 1010 - 4
DISPOS 1010 - 11
LOAD SW 1010 - 3

0V WHEN "QUICK PLAY" PUSHED

0V WHEN "LOAD" PUSHED

SIDA 1010 - 7
SICL 1010 - 6

HF 1010 - 18
+10 1010 - 15
-10 1010 - 16
GND 1010 - 14
GND 1010 - 13
GND 1010 - 12

eyepattern
2.5V
0,5us/DIV

CD6RES

7100 SAA7345GP/M5

PLL FRONT-END
DIGITAL PLL
EFM DEMODULATOR
AUDIO PROCESSOR
RAM ADDRESSER
SRAM
ERROR CORRECTOR
FLAGS
PEAK DETECT
Q-CHANNEL CRC CHECK
Q-CHANNEL REGISTER
MOTOR CONTROL
VERSATILE PINS INTERFACE
EBU INTERFACE
OSCILLATOR
TIMING
TEST
MICROPROCESSOR INTERFACE
SERIAL DATA INTERFACE
KILL
NC

DACDA
DACWS
DACCL
TO DAC CIRCUIT

7700 MC68HC11ER32
I/O PORT
CPU
ROM
RAM
TIMING

5V OPENING
0V CLOSING
2.5V REST

7500 BC858

+V 1008 - 1 → +10
-V 1008 - 2 → -10
GND 1008 - 4
OTD 1010 - 17
VFTD 1008 - 5
VAC1 1008 - 6
VAC2 1008 - 7

7502 L7805CV

≠5V STOP MODE
0V PLAY MODE
HIGH PULSES PAUSE,NEXT,PREVIOUS

STOP
START
PLAY
PULSE DENSITY CONTROL
1uS/DIV

0.5uS/DIV
CL
DA
WS
LEFT CHANNEL
RIGHT CHANNEL

7600 B TCA0372DP2

CONN. 1008 FROM CONN. 1005 ON POWER SUPPLY CIRCUIT

CONN. 1410 TO CONN. 1403 ON DISPLAY CIRCUIT

1410 - 5 VAC2
1410 - 6 VAC1
1410 - 7 VFTD

20

7501 BC858
TO D6360, D6361 ON DAC CIRCUIT
KILL1
80
0V IN STOP PAUSE
-8V IN PLAY MODE
3505 4k7
DISC DETECTION
7601 BPW85A
3609 220k
DISC POSITION DETECTION(CARROUSEL TURNING)
LOW PULSE WHEN NO DISC IS PRESENT
87
3504 22k
3751 1k
3727 5k6
CD6RES
3719 1k
3720 1k
7700 MC68HC11ER32
I/O PORT
CPU
ROM
RAM
TIMING
3703 22k
3714 22k
3752 22k
3740 22k
3711 22k
2701 22nF
2703 22nF
3503 22k
3700 220k
1050 12 MHz
3500 560R
3501 1k
7500 BC858
6500 3V9
3502 22k
3724 22k
3706 22k
3723 22k
3707 22k
3708 22k
3701 22k
3709 22k
1602 TRAY SW
CONN. 1410 TO CONN. 1403 ON DISPLAY CIRCUIT
1410 - 3 +5
2707 22nF
1410 - 2 GND
1410 - 1 IR
1410 - 12 NP
1410 - 9 SDAT0
1410 - 4 DISRES
1410 - 11 SDIS
1410 - 8 SCK
100pF 2706
3725 1k
4011
4012
84
LOW WHEN READING TOC
LOW WHEN STOP
1410 - 10 ACK
1010 - 10 SLEDGE SW
1410 - 13 NP
2705 100pF
2704 100pF
3710 22K
ESIOUT
ESIIN
85
0V TRAY CLOSED
5V TRAY OPEN
5V OPENING
0V CLOSING
2.5V REST
83
3607 12k
3606 12k
3604 3k9
7600 A TCA0372DP2
22nF 2602
2601 22n
3602 12k
3601 12k
3603 22R
2600 100n
3608 1R
1071 - 2
1071 - 1 TRAY MOTOR
-8V OPENING
+8V CLOSING
0V REST
82
2100 2n2
3100 2k2
3101 22k
2101 47pF
2102 22n
2103 100nF
3107 330R
3108 220R
2105 100pF
3715 10k
7100 SAA7345GP/M5
NC
PLL FRONT-END
TEST
MICROPROCESSOR INTERFACE
KILL
DIGITAL PLL
EFM DEMODULATOR
AUDIO PROCESSOR
PEAK DETECT
SERIAL DATA INTERFACE
RAM ADDRESSER
SRAM
ERROR CORRECTOR
FLAGS
Q-CHANNEL CRC CHECK
Q-CHANNEL REGISTER
MOTOR CONTROL
VERSATILE PINS INTERFACE
EBU INTERFACE
OSCILLATOR
TIMING
MISC
DATA
WCLK
SCLK
3109 220R
3110 220R
3111 220R
73
71
72
DACDA
DACWS
DACCL
TO DAC CIRCUIT
KILLL
KILLR
3146 100R
3116 100R
3114 1M
3117 0R
3113 2k2
+5V
5100 2u2H
1101 33.8688MHz
2118 47pF
2114 1n
2113 22p
2112 10p
2142 47pF
2143 22nF
2111 22nF
2110 47uF/25V
0.5uS/DIV
CL
DA
WS
LEFT CHANNEL
RIGHT CHANNEL
24
LSB
MSB
TO C2251 ON DAC CIRCUIT
DIGOUT
1uS/DIV
81
12
3141 33k
3140 33k
3142 33k
3147 4k7
3143 100k
3144 100k
7600 B TCA0372DP2
3145 22k
2141 100n
2140 47n
1010 - 1 TURNTABLE MOTOR
CONN. 1010 TO CONN. 1811 ON SERVO CIRCUIT
3999
IDENTIFICATION RESISTOR FOR AUTOMATIC MEASURMENTS

1008 I 1
1008 K 1
1008 K 1
1008 A 1
1008 L 1
1008 M 1
1008 M 1
1010 N26
1010 D 1
1010 E 1
1010 E 1
1010 D 1
1010 F 1
1010 F 1
1010 D 1
1010 D 1
1010 E26
1010 E 1
1010 I 1
1010 H 1
1010 H 1
1010 G 1
1010 G 1
1010 L 1
1010 G 1
1050 H19
1071 H26
1071 G26
1101 L12
1410 C26
1410 B26
1410 B26
1410 C26
1410 O 3
1410 O 3
1410 O 4
1410 D26
1410 C26
1410 E26
1410 D26
1410 C26
1410 E26
1602 B25
2100 G 8
2101 G10
2102 G11
2103 G 9
2105 G13
2110 L15
2111 L14
2112 L13
2113 L12
2114 L12
2115 H 9
2116 H 8
2118 L11
2140 N18
2141 N20
2142 L10
2143 L13
2501 J 4
2502 J 5
2504 K 4
2600 H25
2601 H25
2602 G25
2701 B20
2703 B21
2704 E26
2705 E25
2706 C25
2707 B26
3100 G 9
3101 G 9
3102 G 2
3107 G12
3108 G13
3109 I15
3110 J15
3111 J15
3113 L15
3114 L12
3115 H 8
3116 L12
3117 L13
3140 N16
3141 N16
3142 N17
3143 N18
3144 M19
3145 N20
3146 L10
3147 N18
3500 H17
3501 H18
3502 I18
3503 G18
3504 C11
3505 B11
3508 G 2
3601 H24
3602 H23
3603 H25
3604 G23
3606 F24
3607 F23
3608 G26
3609 A15
3700 G19
3701 B24
3703 A17
3706 B22
3707 B23
3708 B23
3709 B24
3710 E25
3711 B17
3714 A18
3715 G12
3716 F 8
3717 B 8
3718 B 9
3719 E14
3720 F14
3723 B23
3724 B22
3725 C21
3726 B 8
3727 E14
3735 B 9
3736 B 7
3737 B 8
3738 B 9
3740 B16
3751 C14
3752 A19
3999 N26
4011 D25
4012 E25
5100 L12
6500 I17
7100 H14
7500 H18
7501 A11
7502 J 4
7600 G24
7600 N19
7601 B15
7700 B21

3085_0279_1_B

DECODER & DAC PANEL COMPONENT SIDE

9056 F 3	3999 B 4	3143 E 3	1008 F 1
9057 A 1	4000 B 3	3144 E 3	1010 D 4
9058 B 2	4001 A 3	3145 E 4	1020 B 1
9060 C 1	4002 A 1	3146 B 1	1050 E 2
9061 E 2	4003 B 3	3147 E 3	1071 F 3
9130 E 1	4004 C 3	3252 A 1	1073 A 1
9131 E 1	4005 A 3	3300 C 3	1101 A 1
9134 D 2	4006 B 1	3301 B 2	1250 A 1
9135 C 1	4009 C 1	3302 B 3	1300 A 2
9136 D 3	4010 E 2	3303 B 3	1301 B 2
9137 D 3	4011 E 2	3304 B 2	1302 A 4
	4012 F 2	3305 B 3	1410 F 3
	4013 F 2	3306 A 2	1602 D 1
	4014 D 1	3307 A 2	1750 A 3
	4300 A 2	3308 A 2	1751 A 3
	4301 A 2	3309 A 2	1800 D 1
	4501 F 1	3310 B 2	1815 B 4
	4740 A 4	3330 C 2	2100 A 1
	5100 A 1	3331 B 2	2101 A 1
	5250 A 1	3332 A 2	2102 A 1
	5300 B 2	3333 B 3	2103 B 1
	5301 B 3	3334 B 3	2105 B 1
	5501 E 1	3360 B 2	2110 B 1
	5502 E 1	3361 B 1	2111 B 1
	6360 B 3	3362 B 3	2112 B 1
	6361 B 2	3363 A 2	2113 A 1
	6500 D 2	3364 A 2	2114 A 1
	6740 A 4	3365 A 2	2115 A 1
	7100 B 1	3366 A 2	2116 A 1
	7300 C 2	3367 B 2	2118 B 1
	7301 B 3	3368 B 3	2140 E 3
	7302 C 2	3369 A 1	2141 E 4
	7360 B 3	3376 A 2	2142 B 1
	7361 A 1	3377 A 2	2143 B 1
	7362 A 2	3500 D 2	2251 A 1
	7363 A 2	3501 D 2	2253 A 1
	7364 A 2	3502 D 2	2254 A 1
	7365 B 2	3503 D 1	2300 B 3
	7500 D 2	3504 D 1	2301 C 3
	7501 E 1	3505 E 1	2302 B 3
	7502 C 1	3506 E 1	2303 C 3
	7600 E 3	3507 E 1	2304 B 3
	7601 C 1	3508 C 3	2305 B 3
	7700 D 1	3600 D 3	2306 A 3
	7730 D 2	3601 E 3	2307 A 3
	7740 A 3	3602 E 3	2308 A 2
	7741 A 3	3603 E 4	2309 A 2
	7742 A 4	3604 E 2	2310 B 3
	9000 A 1	3605 D 3	2311 B 3
	9001 B 2	3606 E 4	2312 B 3
	9002 B 2	3607 E 3	2313 C 2
	9003 B 2	3608 E 4	2314 B 3
	9004 B 2	3609 E 1	2315 B 2
	9005 B 1	3700 E 2	2316 C 3
	9006 C 3	3701 D 1	2317 A 2
	9007 E 1	3702 E 1	2330 B 2
	9008 A 3	3703 E 1	2331 C 2
	9009 A 3	3704 D 2	2332 C 2
	9010 A 1	3705 C 1	2333 C 2
	9011 B 3	3706 D 1	2334 C 2
	9012 B 3	3707 E 2	2335 B 2
	9013 A 2	3708 E 2	2336 B 3
	9014 A 2	3709 D 1	2337 B 3
	9015 E 1	3710 E 1	2338 A 3
	9016 E 1	3711 E 1	2339 C 2
	9017 B 1	3712 E 1	2500 C 1
	9018 C 1	3713 E 1	2501 C 1
	9019 D 1	3714 E 1	2502 C 1
	9020 E 1	3715 B 1	2503 E 1
	9021 C 3	3716 D 2	2504 E 1
	9022 C 3	3717 D 1	2505 D 3
	9023 C 3	3718 D 1	2600 E 4
	9024 E 1	3719 D 1	2601 E 4
	9025 D 1	3720 D 1	2602 E 3
	9026 E 2	3721 D 1	2700 D 2
	9027 D 2	3722 D 2	2701 D 1
	9028 E 2	3723 D 1	2703 D 2
	9029 D 4	3724 E 2	2704 F 3
	9030 D 4	3725 D 1	2705 F 2
	9031 D 3	3726 D 2	2706 F 2
	9032 D 3	3727 E 2	2707 F 3
	9033 D 3	3728 B 4	2708 E 3
	9034 D 3	3729 E 1	2709 E 3
	9035 D 2	3730 B 4	2710 E 3
	9036 E 2	3732 B 4	2730 D 2
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	9038 D 2	3734 B 4	2741 A 3
	9039 D 2	3735 D 1	2742 A 3
	9040 E 3	3736 E 1	3100 A 1
	9041 E 4	3737 D 1	3101 A 1
	9042 C 1	3738 E 1	3102 C 3
	9043 C 1	3739 E 2	3107 B 1
	9044 C 4	3740 E 2	3108 B 1
	9045 C 1	3743 A 3	3109 B 1
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	9047 D 2	3745 A 3	3111 B 1
	9048 D 2	3746 A 3	3113 A 1
	9049 C 2	3747 A 3	3114 A 1
	9050 D 1	3748 A 3	3115 A 1
	9051 D 1	3749 A 4	3116 B 1
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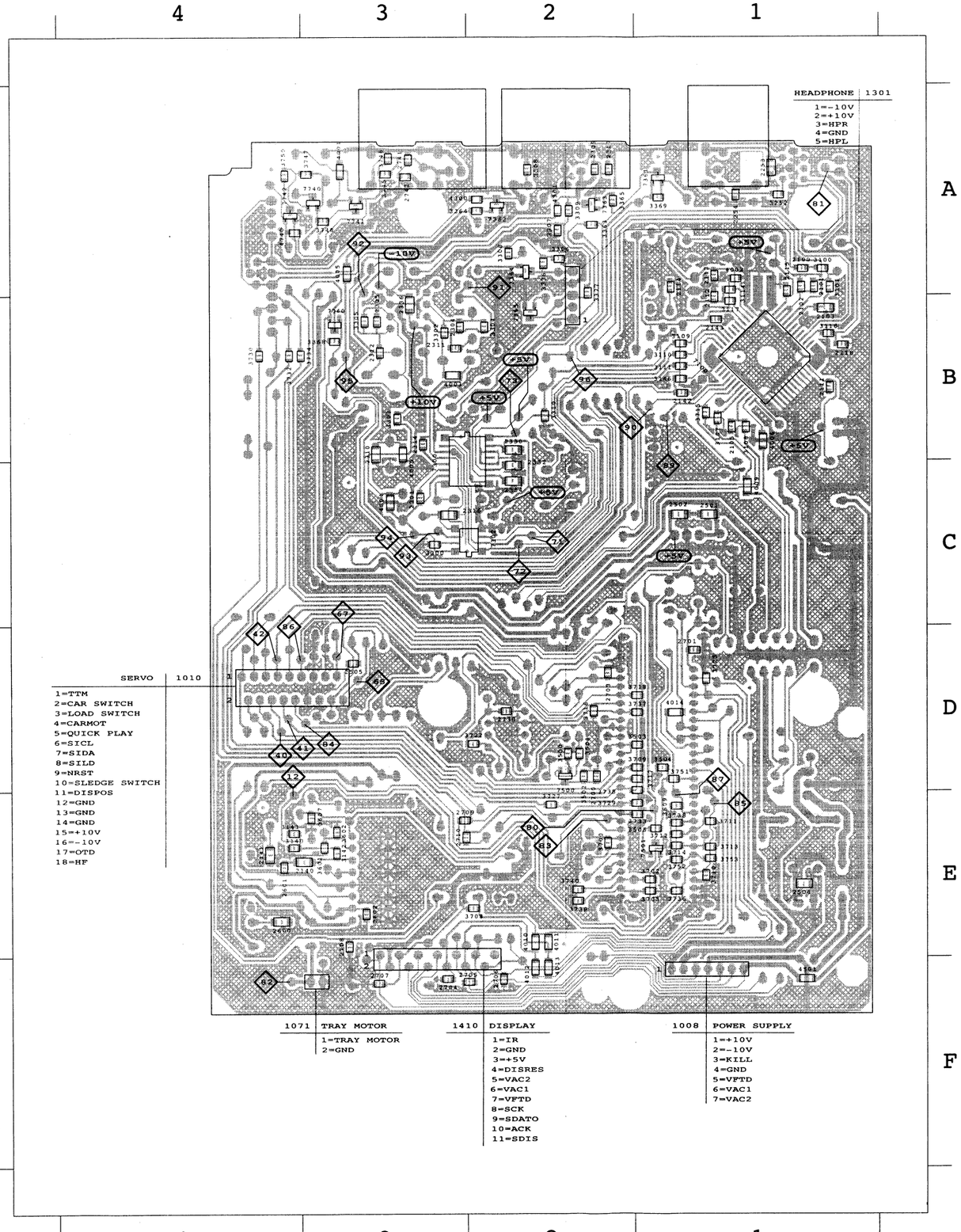

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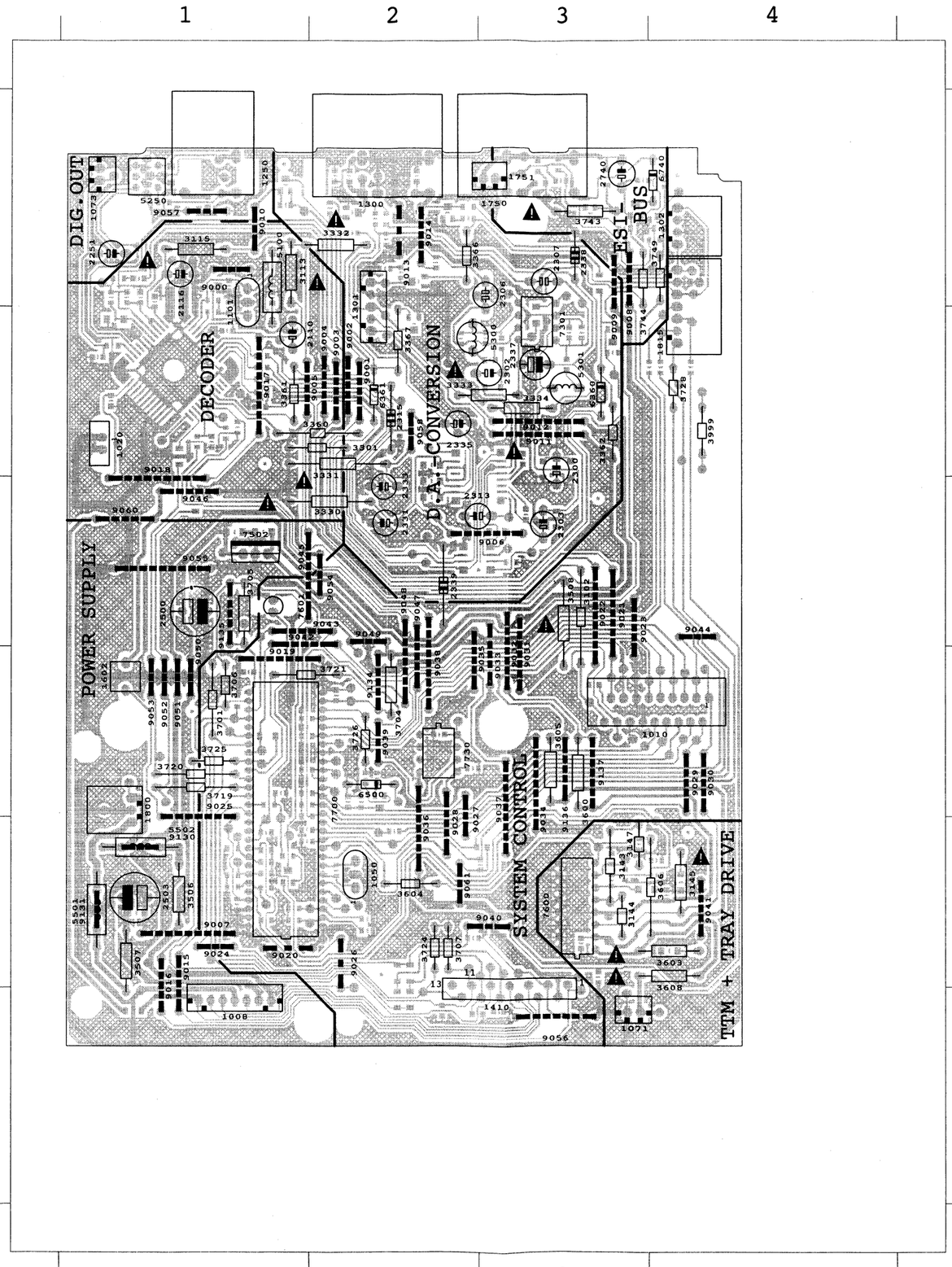

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1071 F 3
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1301 B 2
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1410 F 3
1602 D 1
1750 A 3
1751 A 3
1800 D 1
1815 B 4
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2103 B 1
2105 B 1
2110 B 1
2111 B 1
2112 B 1
2113 A 1
2114 A 1
2115 A 1
2116 A 1
2118 B 1
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2141 E 4
2142 B 1
2143 B 1
2251 A 1
2253 A 1
2254 A 1
2300 B 3
2301 C 3
2302 B 3
2303 C 3
2304 B 3
2305 B 3
2306 A 3
2307 A 3
2308 A 2
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2313 C 2
2314 B 3
2315 B 2
2316 C 3
2317 A 2
2330 B 2
2331 C 2
2332 C 2
2333 C 2
2334 C 2
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2336 B 3
2337 B 3
2338 A 3
2339 C 2
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2601 E 4
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2705 F 2
2706 F 2
2707 F 3
2708 E 3
2709 E 3
2710 E 3
2730 D 2
2740 A 3
2741 A 3
2742 A 3
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3101 A 1
3102 C 3
3107 B 1
3108 B 1
3109 B 1
3110 B 1
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3117 B 1
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3367 B 2
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3702 E 1
3703 E 1
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9009 A 3
9010 A 1
9011 B 3
9012 B 3
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9014 A 2
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9016 E 1
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9019 D 1
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9025 D 1
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9033 D 3
9034 D 3
9035 D 2
9036 E 2
9037 D 3
9038 D 2
9039 D 2
9040 E 3
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9044 C 4
9045 C 1
9046 C 1
9047 D 2
9048 D 2
9049 C 2
9050 D 1
9051 D 1
9052 D 1
9053 D 1
9054 C 2
9055 C 1
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9057 A 1
9058 B 2
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9135 C 1
9136 D 3
9137 D 3

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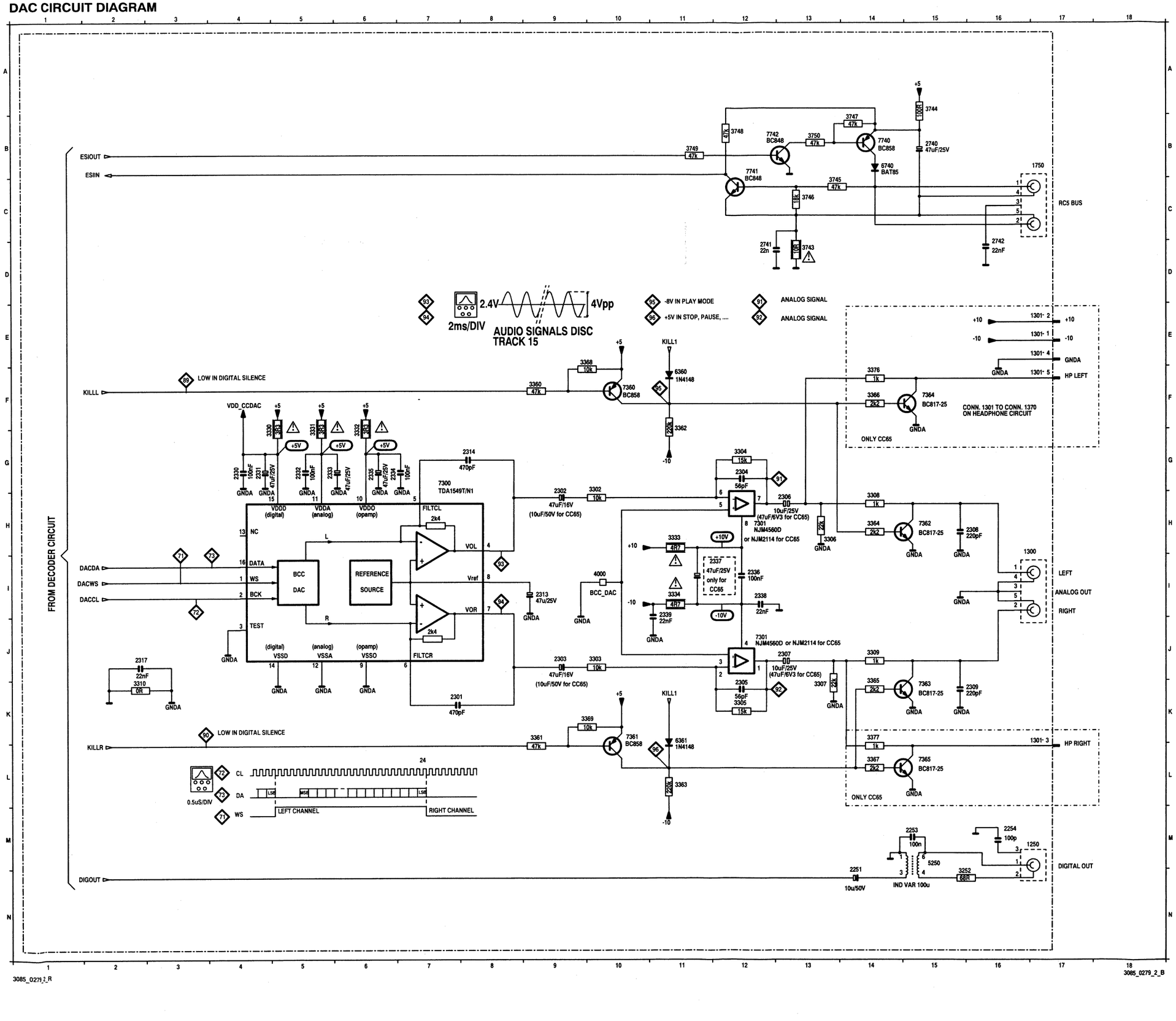
DAC CIRCUIT DIAGRAM



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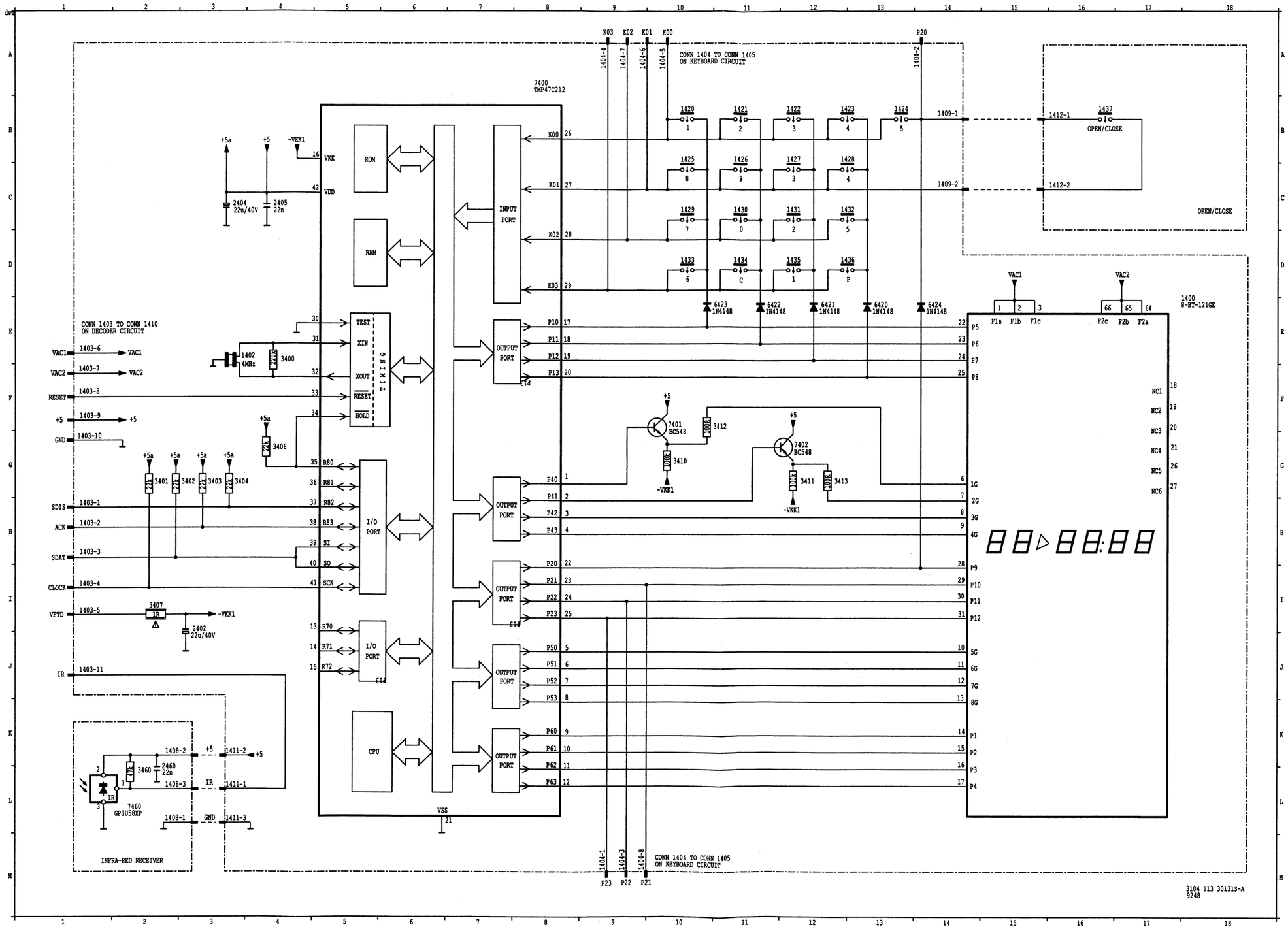
CONTROL & DISPLAY CIRCUIT DIAGRAM
I.R. CIRCUIT DIAGRAM



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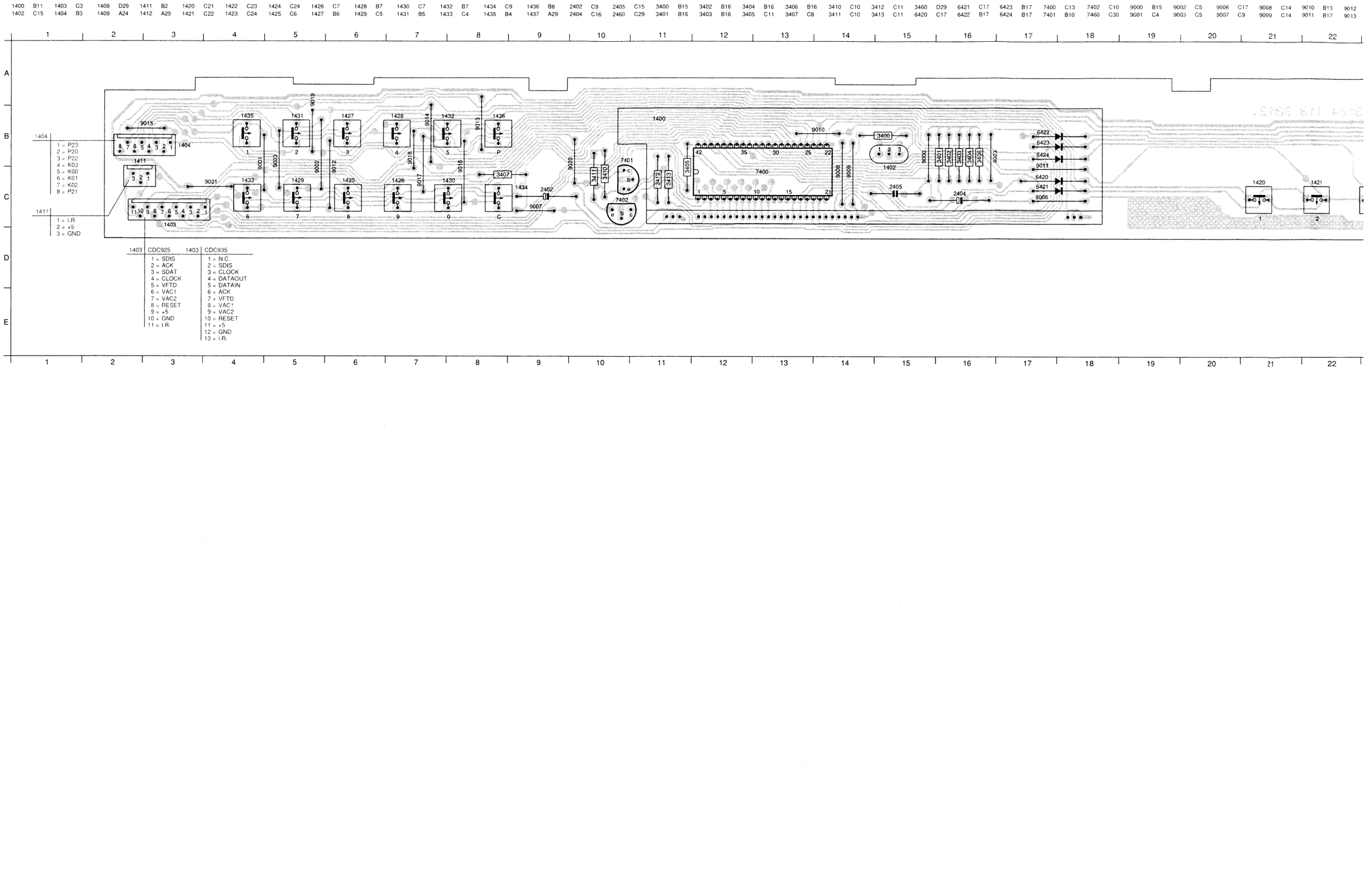
CONTROL & DISPLAY PANEL
OPEN/CLOSE - I.R. PANEL



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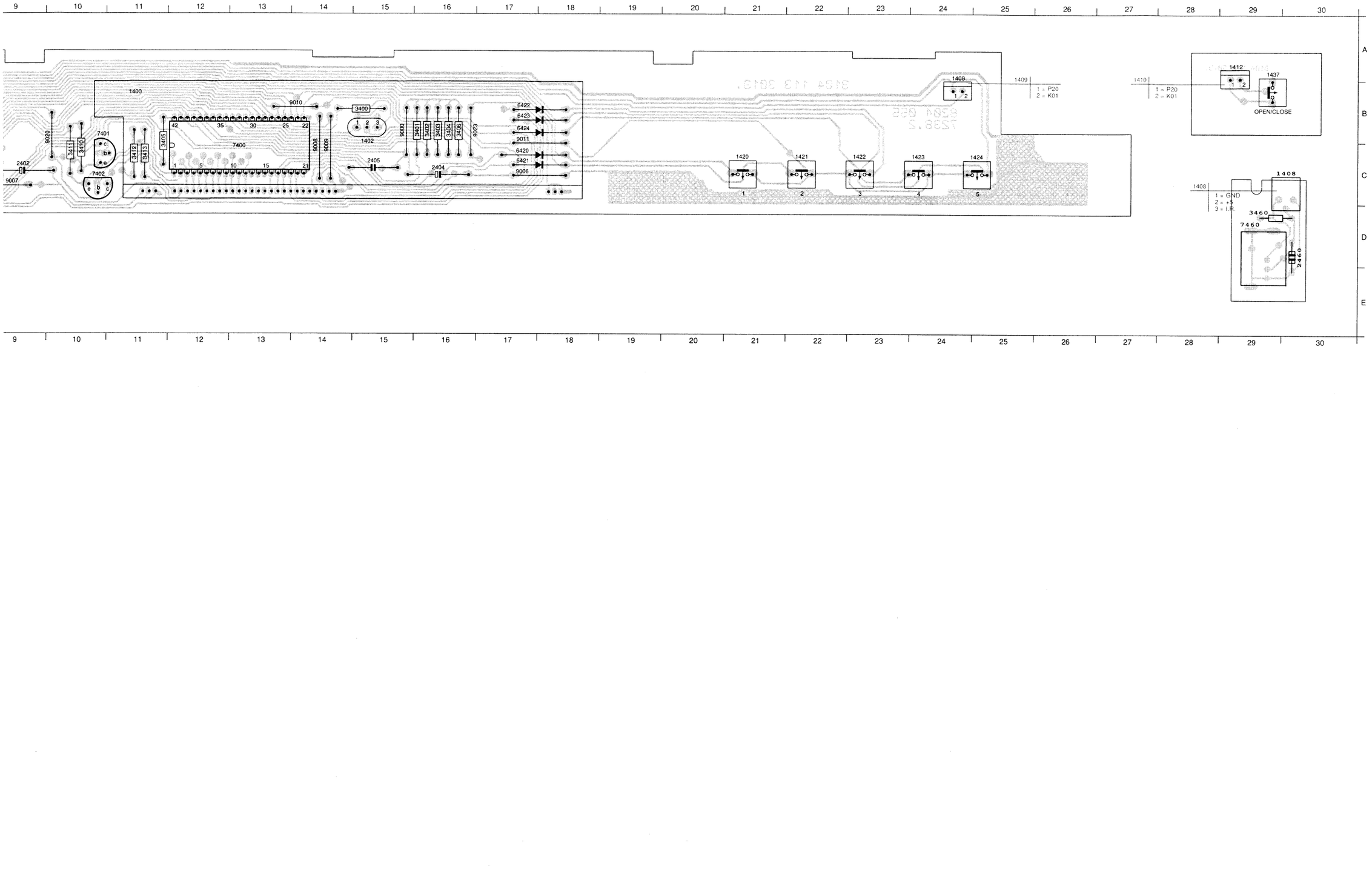
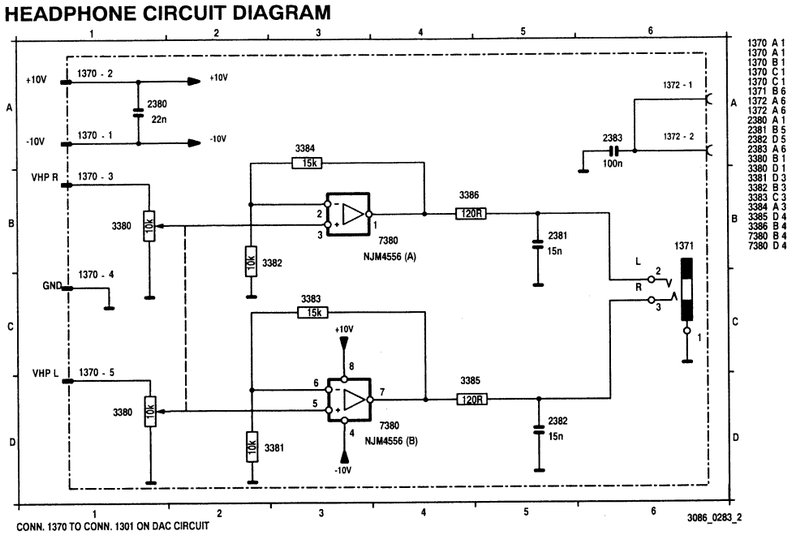
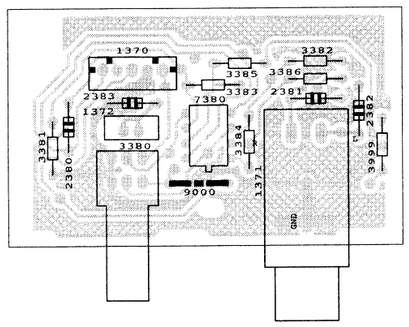
1436 B8 2402 C9 2405 C15 3400 B15 3402 B16 3404 B16 3406 B16 3410 C10 3412 C11 3460 D29 6421 C17 6423 B17 7400 C13 7402 C10 9000 B15 9002 C5 9006 C17 9008 C14 9010 B13 9012 C6 9014 B7 9016 C8 9018 B7 9020 C10 9023 B17
1437 A29 2404 C16 2460 C29 3401 B16 3403 B16 3405 C11 3407 C8 3411 C10 3413 C11 6420 C17 6422 B17 6424 B17 7401 B10 7460 C30 9001 C4 9003 C5 9007 C9 9009 C14 9011 B17 9013 B8 9015 B2 9017 C7 9019 B5 9021 C4



HEADPHONE CIRCUIT DIAGRAM



HEADPHONE PANEL



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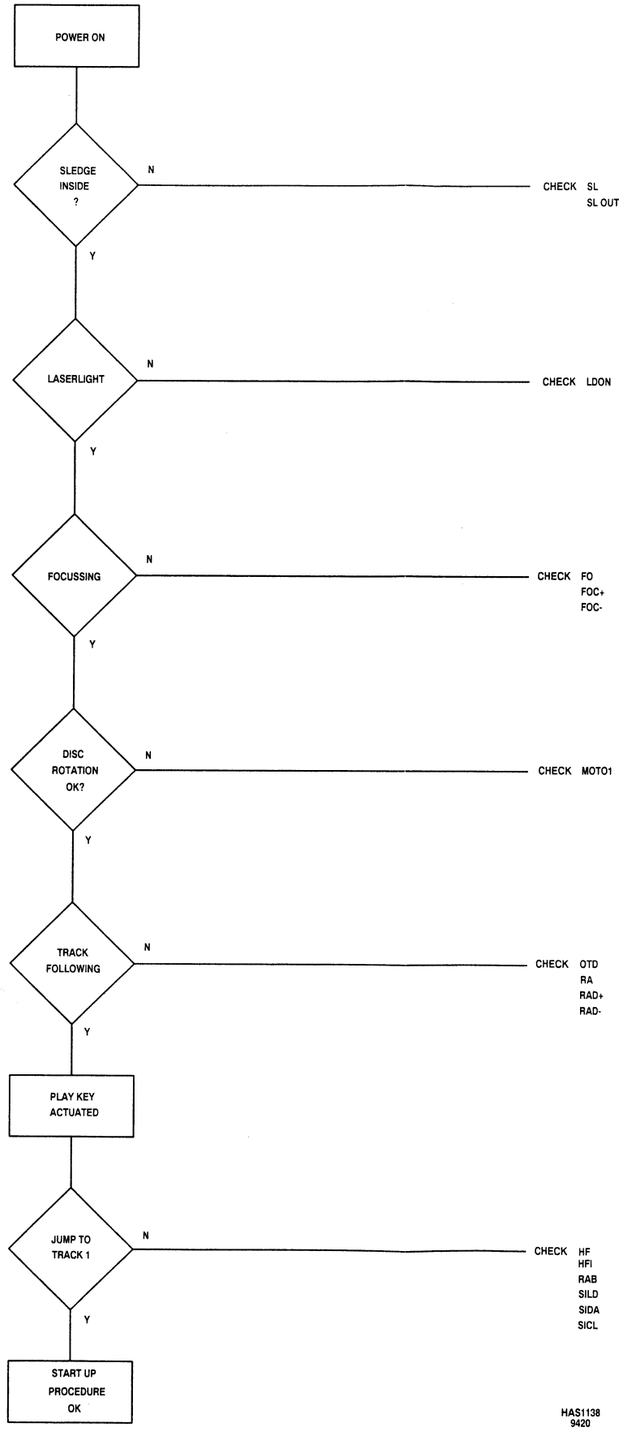
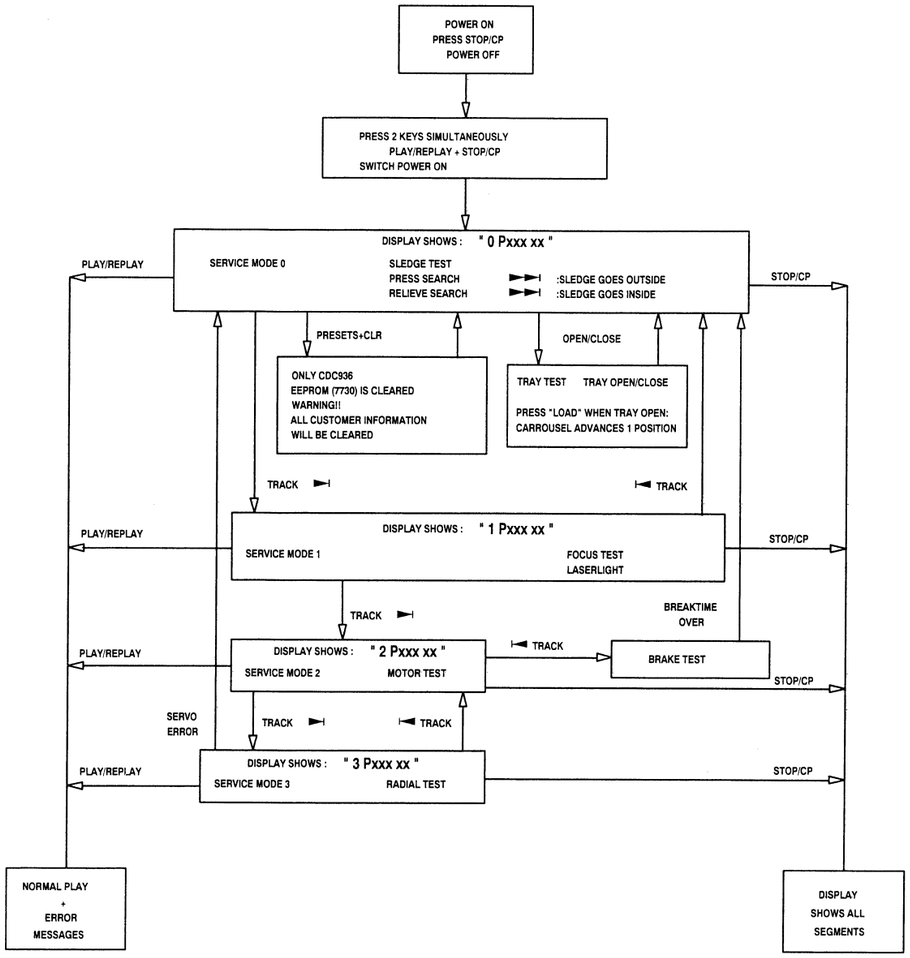
START UP PROCEDURE



SERVICE TEST PROGRAM



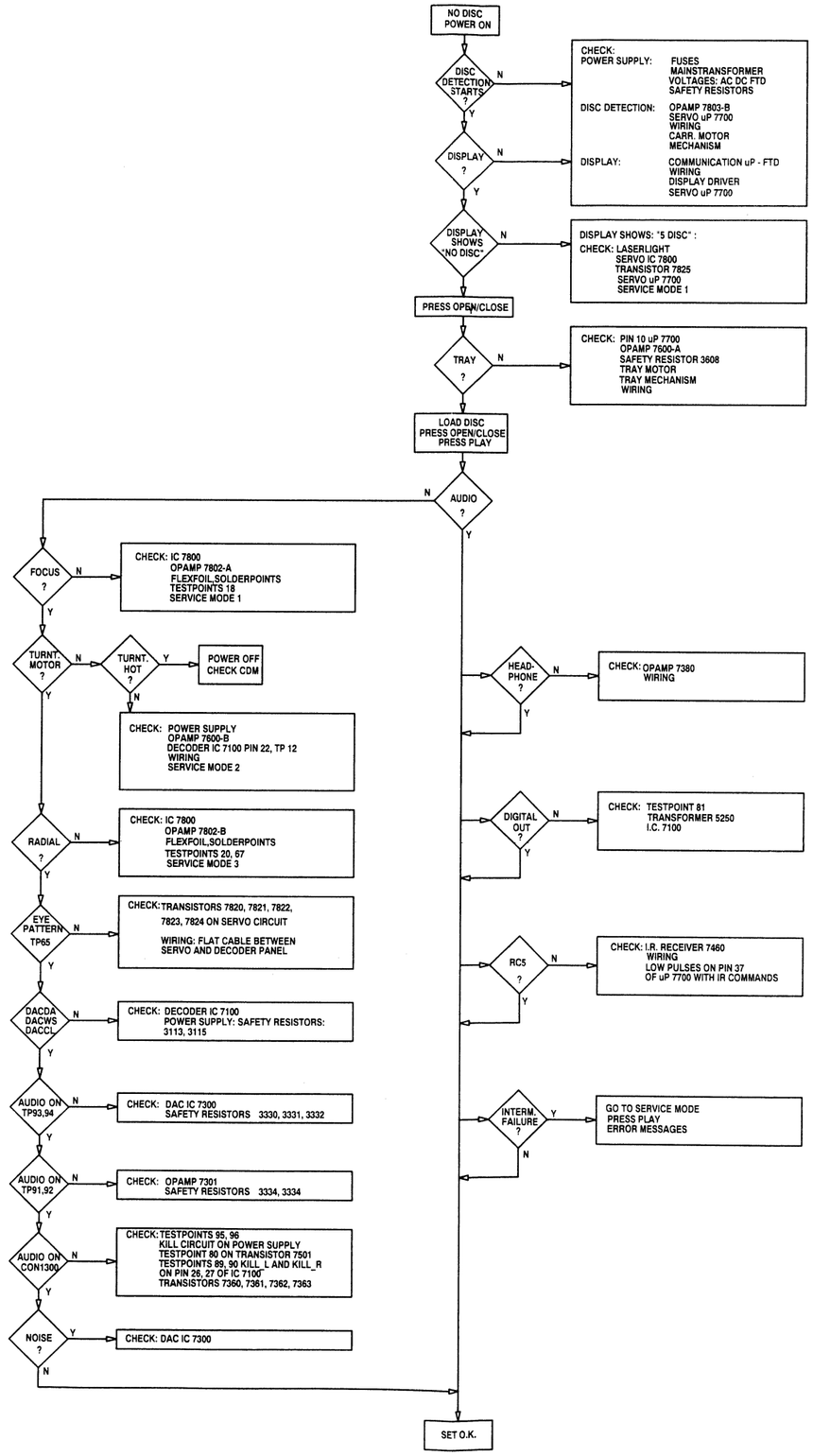
ERROR MESSAGES

- "SLEDGE ERROR"
- "FOCUS ERROR"
- "RADIAL ERROR"
- "MOTOR ERROR"
- "EEP ER"
- "EEP OK"

Pxxx = PROGRAM OF MICROPROCESSOR
xx = VERSION OF PROGRAM

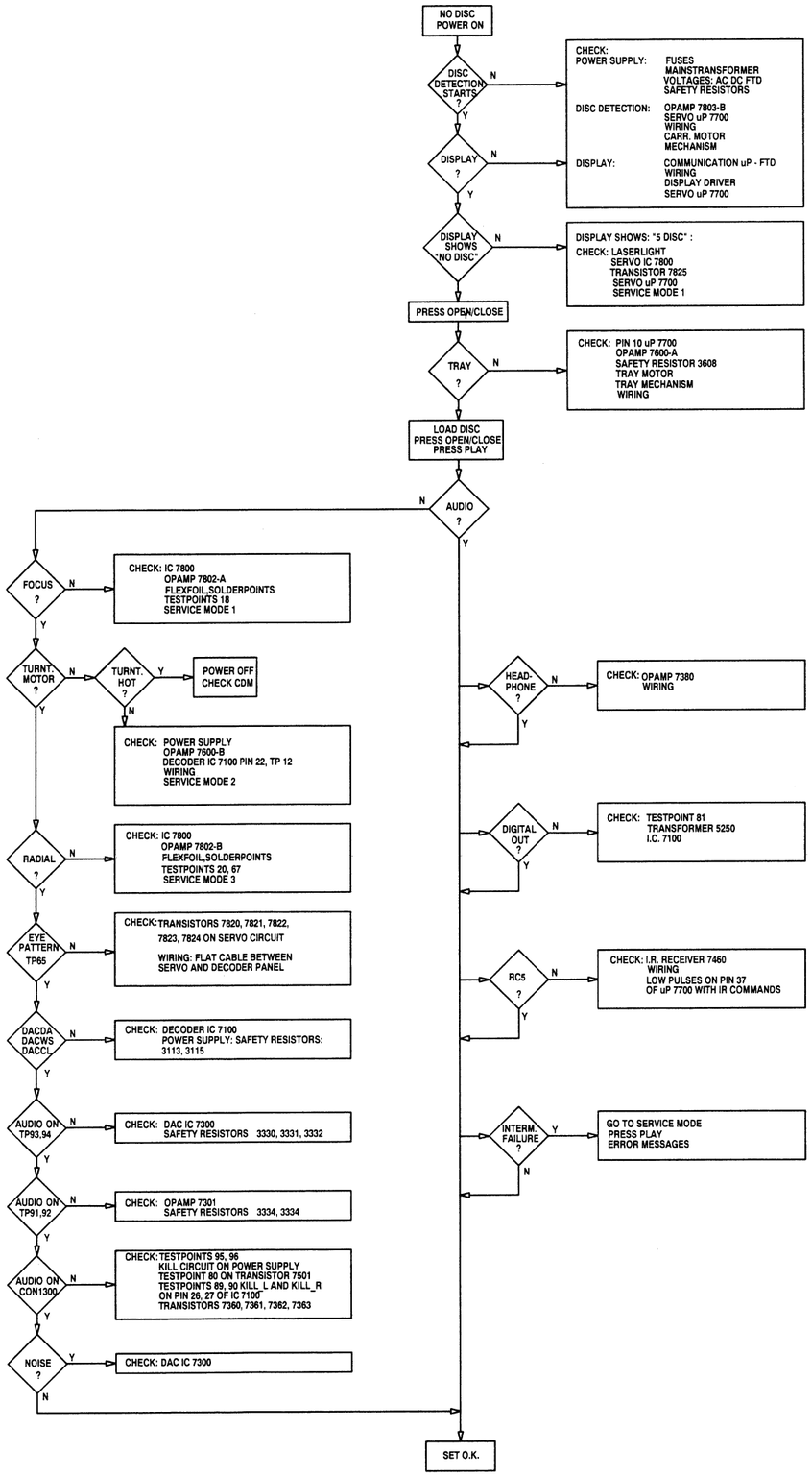
HAS1137
9419

FAULTFINDING GUIDE



HAS1140
9419

FAULTFINDING GUIDE


NO DISC POWER ON
DISC DETECTION STARTS ?
CHECK: POWER SUPPLY: FUSES MAINSTRANSFORMER VOLTAGES: AC DC FTD SAFETY RESISTORS
DISC DETECTION: OPAMP 7803-B SERVO uP 7700 WIRING CARR. MOTOR MECHANISM
DISPLAY ?
DISPLAY: COMMUNICATION uP - FTD WIRING DISPLAY DRIVER SERVO uP 7700
DISPLAY SHOWS "NO DISC"
DISPLAY SHOWS: "5 DISC" : CHECK: LASERLIGHT SERVO IC 7800 TRANSISTOR 7825 SERVO uP 7700 SERVICE MODE 1
PRESS OPEN/CLOSE
TRAY ?
CHECK: PIN 10 uP 7700 OPAMP 7900-A SAFETY RESISTOR 3608 TRAY MOTOR TRAY MECHANISM WIRING
LOAD DISC PRESS OPEN/CLOSE PRESS PLAY
AUDIO ?
FOCUS ?
CHECK: IC 7800 OPAMP 7802-A FLEXFOIL,SOLDERPOINTS TESTPOINTS 18 SERVICE MODE 1
TURNT. MOTOR ?
TURNT. HOT ?
POWER OFF CHECK CDM
CHECK: POWER SUPPLY OPAMP 7600-B DECODER IC 7100 PIN 22, TP 12 WIRING SERVICE MODE 2
RADIAL ?
CHECK: IC 7800 OPAMP 7802-B FLEXFOIL,SOLDERPOINTS TESTPOINTS 20, 67 SERVICE MODE 3
EYE PATTERN TP65
CHECK: TRANSISTORS 7820, 7821, 7822, 7823, 7824 ON SERVO CIRCUIT WIRING: FLAT CABLE BETWEEN SERVO AND DECODER PANEL
DACDA DACWS DACCL
CHECK: DECODER IC 7100 POWER SUPPLY: SAFETY RESISTORS: 3113, 3115
AUDIO ON TP93,94
CHECK: DAC IC 7300 SAFETY RESISTORS 3330, 3331, 3332
AUDIO ON TP91,92
CHECK: OPAMP 7301 SAFETY RESISTORS 3334, 3334
AUDIO ON CON1300
CHECK: TESTPOINTS 95, 96 KILL CIRCUIT ON POWER SUPPLY TESTPOINT 80 ON TRANSISTOR 7501 TESTPOINTS 89, 90 KILL_L AND KILL_R ON PIN 26, 27 OF IC 7100 TRANSISTORS 7360, 7361, 7362, 7363
NOISE ?
CHECK: DAC IC 7300
HEAD-PHONE ?
CHECK: OPAMP 7380 WIRING
DIGITAL OUT ?
CHECK: TESTPOINT 81 TRANSFORMER 5250 I.C. 7100
RC5 ?
CHECK: I.R. RECEIVER 7460 WIRING LOW PULSES ON PIN 37 OF uP 7700 WITH IR COMMANDS
INTERM. FAILURE ?
GO TO SERVICE MODE PRESS PLAY ERROR MESSAGES
SET O.K.

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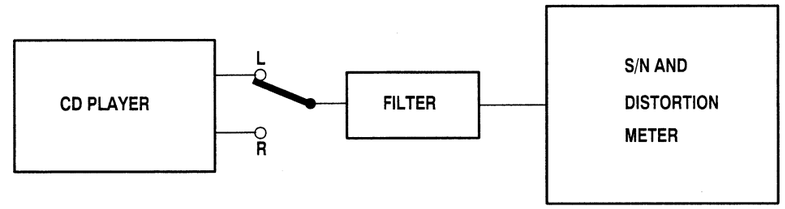
SPECIFICATIONS MEASUREMENT

SIGNAL	AUDIO SIGNALS DISC 1	TESTPOINT	REMARKS
ANALOG OUT LEFT	TOTAL HARMONIC DISTORTION TRACKS 10 - 23	FILTER OUTPUT	SEE TECHNICAL DATA
ANALOG OUT RIGHT			SEE DRAWING
ANALOG OUT LEFT	SIGNAL-TO-NOISE RATIO TRACK 1 REFERENCE LEVEL TRACK 49	FILTER OUTPUT	SEE TECHNICAL DATA
ANALOG OUT RIGHT			SEE DRAWING

FILTER = 13TH ORDER FILTER 4822 395 30204



e.g. SOUND TECHNOLOGIE ST1700B

HAS1140
9419

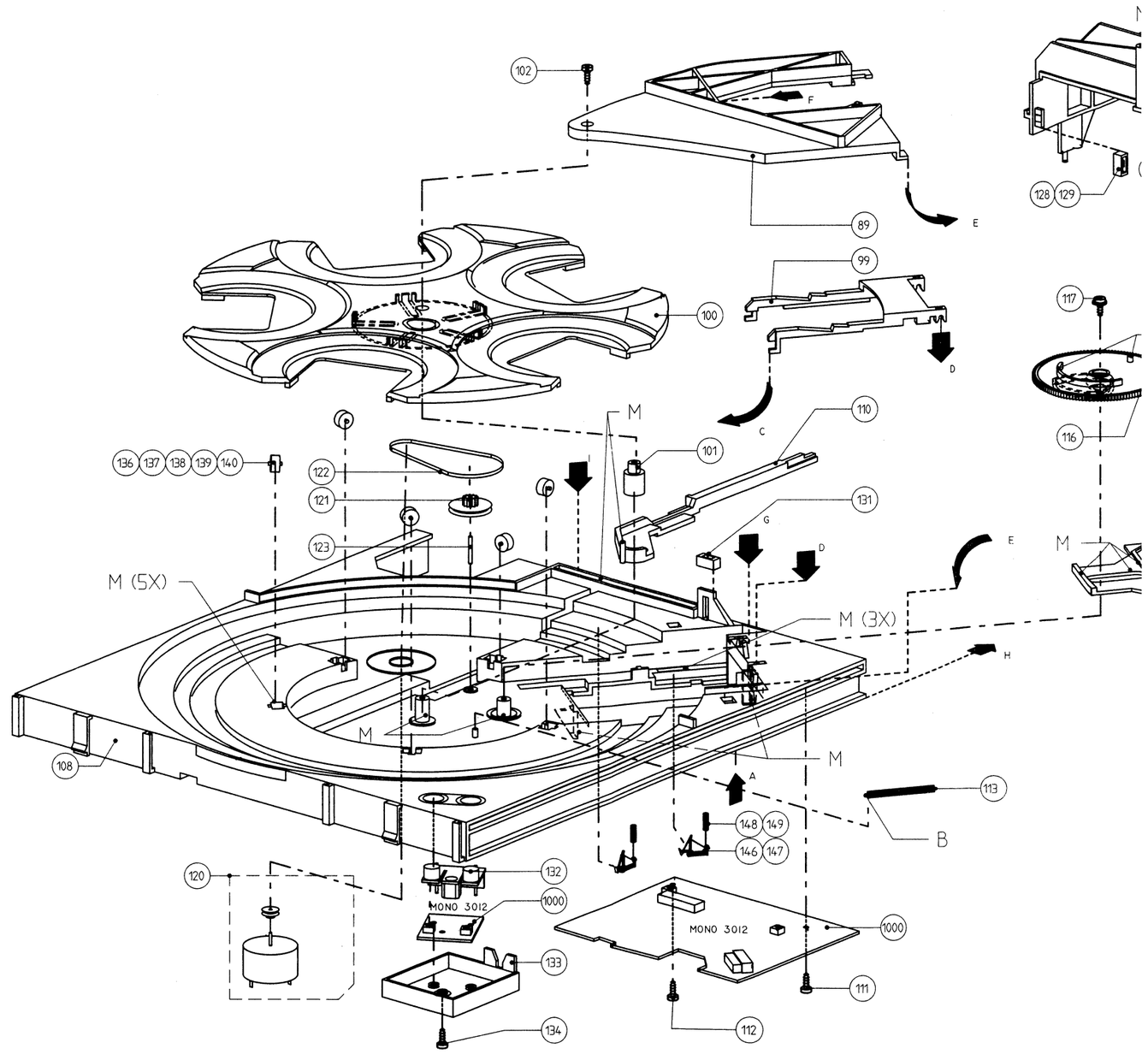
PARTS LIST LOADING

89	4822 466 93131	PRESSURE PLATE
90	4822 256 91912	PRESSURE RING HOLDER
91	4822 532 52386	PRESSURE RING
95	4822 522 33255	GEAR WHEEL
96	4822 535 40105	CRANCK
98	4822 691 30278	CDM 12.1 MECHANISM
99	4822 403 70598	CDM LOCKING BRACKET
100	4822 466 93129	ROTARY DISC 5 CD'S
101	4822 520 20758	BEARING
103	4822 401 11447	TRAY TUMBLER
104	4822 325 50215	SUSPENSION
105	4822 325 50215	SUSPENSION
106	4822 325 50215	SUSPENSION
107	4822 325 50215	SUSPENSION
108	4822 444 50685	TRAY ASSY
109	4822 532 51756	DAMPING GROMMET
110	4822 401 11444	BRACKET
113	4822 492 52313	TENSION SPRING
114	4822 256 91915	CDM SUPPORT
115	4822 466 93134	SLIDE STRIP
116	4822 522 33256	CAM WHEEL
119	4822 528 50335	MOTOR
120	4822 528 50335	MOTOR
121	4822 528 50334	PULLEY
122	4822 358 10115	BELT
128	4822 466 93132	GUIDE
129	4822 466 93132	GUIDE
130	4822 426 90109	FRAME ASSY
131	4822 466 93132	GUIDE
132	4822 403 70599	KEY UNIT
133	4822 466 93171	COVER PLATE
136	4822 528 70646	ROLLER
137	4822 528 70646	ROLLER
138	4822 528 70646	ROLLER
139	4822 528 70646	ROLLER
140	4822 528 70646	ROLLER
141	4822 466 93132	GUIDE
142	4822 466 93132	GUIDE
144	4822 528 50334	PULLEY
145	4822 358 10115	DRIVING BELT
146	4822 402 50291	LIFT TUMBLER
147	4822 402 50291	LIFT TUMBLER
148	4822 492 52123	COMPRESSION SPRING
149	4822 492 52123	COMPRESSION SPRING
150	4822 492 52123	COMPRESSION SPRING

Screws

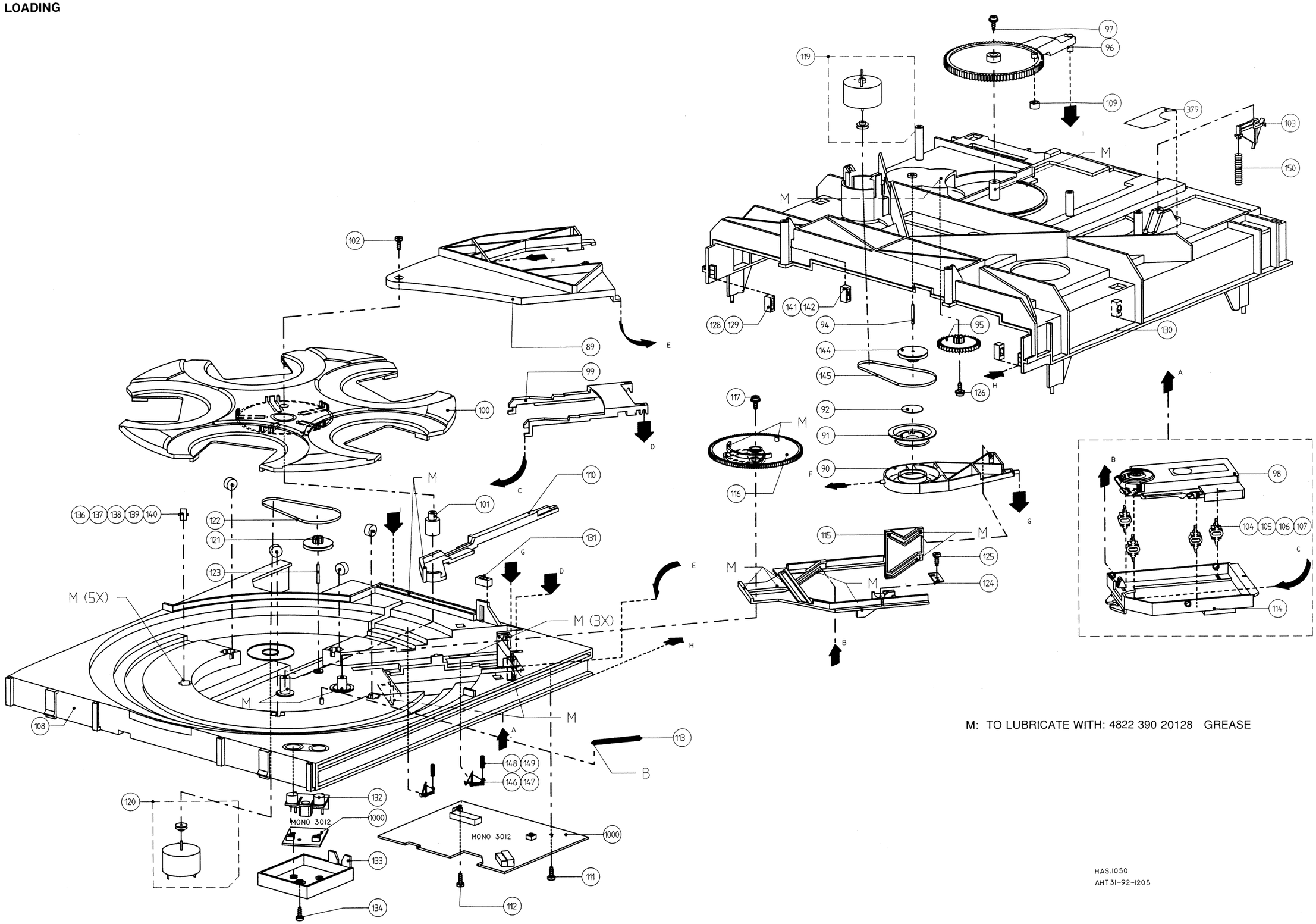
Plastite M3x6:	125
Plastite M3x10:	111,112
Plastite M3x10 + wascher:	97,126
Plastite M3x16:	102,134

EXPLODED VIEW LOADING



28

EXPLODED VIEW
LOADING



M: TO LUBRICATE WITH: 4822 390 20128 GREASE

MECHANICAL PARTS LIST CABINET

2		4822 444 40792	FRONT(CC45)
2		4822 444 40758	FRONT(CC65)
14		4822 454 12948	WORDMARK
15		4822 410 63355	KNOBUNIT(NOSE)
16		4822 410 63354	KNOBUNIT
17		4822 410 63356	KNOBUNIT(10-KEY CC65)
22		4822 450 62296	WINDOW(CC45)
22		4822 450 62295	WINDOW(CC65)
23		4822 450 62294	IR WINDOW
51		4822 410 61467	VOLUME KNOB(CC65)
54		4822 466 93132	GUIDE
60		4822 444 60815	COVER PLATE
71		4822 444 50729	TRAY FRONT
151		4822 444 60995	COVER
180		4822 462 72053	CAP
182		4822 402 61544	POWERROD
251		4822 462 42129	FOOT GOLD FRONT
252		4822 462 42129	FOOT GOLD FRONT
253		4822 462 42131	FOOT GOLD REAR
254		4822 462 42131	FOOT GOLD REAR
283	⚠	4822 532 60948	BUSHING
300	⚠	4822 321 10809	MAINS CORD /02B
302	⚠	4822 321 10849	MAINS CORD /UBL
303	⚠	4822 321 10828	MAINS CORD /07B
308		4822 321 22832	SBC1072 AUDIO CABLE
365		4822 218 10556	REMOTE CONTROL RH7920(CC45)
365		4822 218 10553	REMOTE CONTROL(CC65)

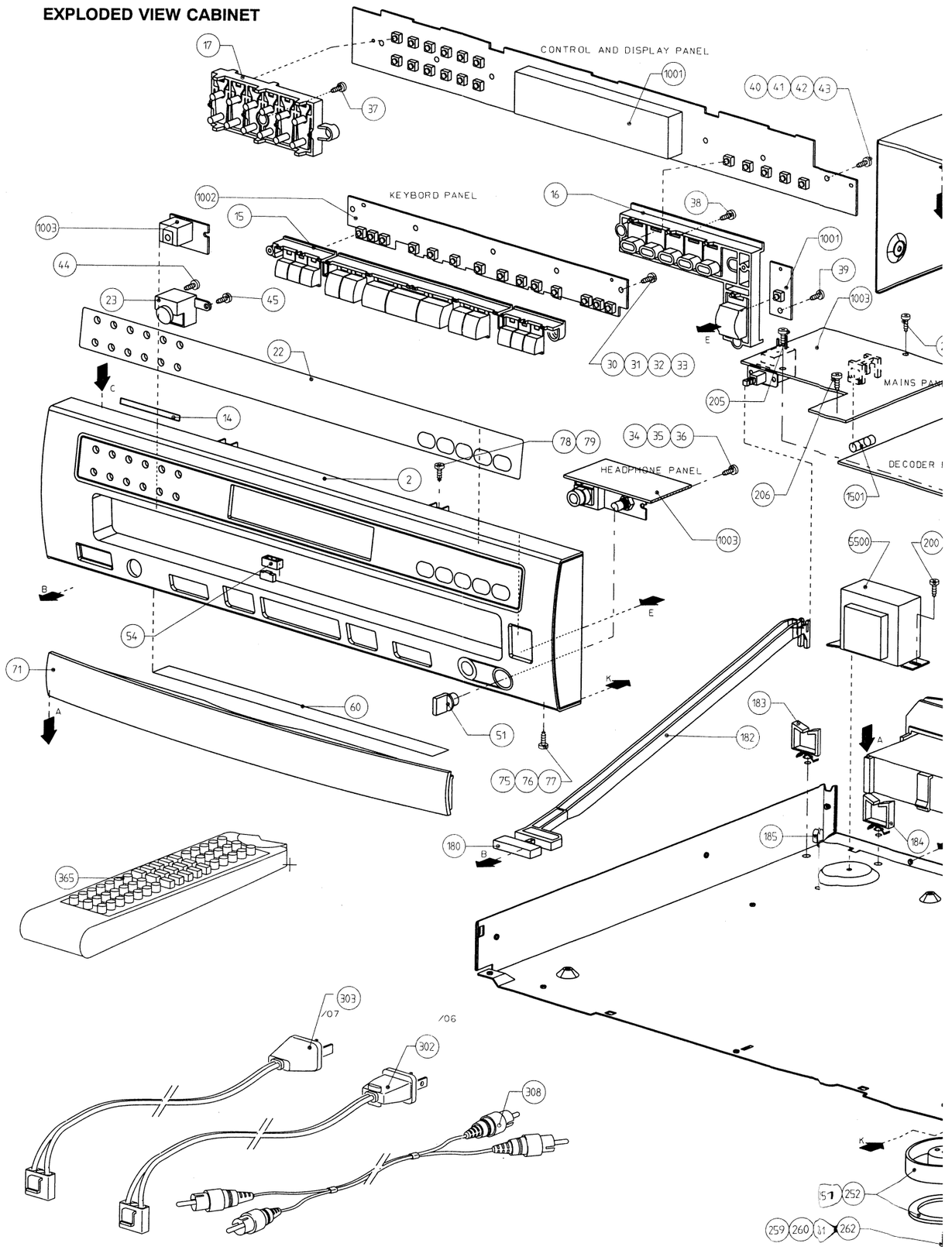
Not mentioned parts are only available during production period on special request.

Screws

Selftapping screw for plastic 3x10: 78,79,202,203,204,205,206,269,270,271,272.
Selftapping screw for plastic 3x12: 30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45.
Selftapping screw for metal M3x6 : 75,76,77,259,260,261,262.
Selftapping screw for metal with washer 3x6: 173,174,175,176,177,178,200,201,211,267,268.
Selftapping screw for metal M3x28: 207,208,209,210.

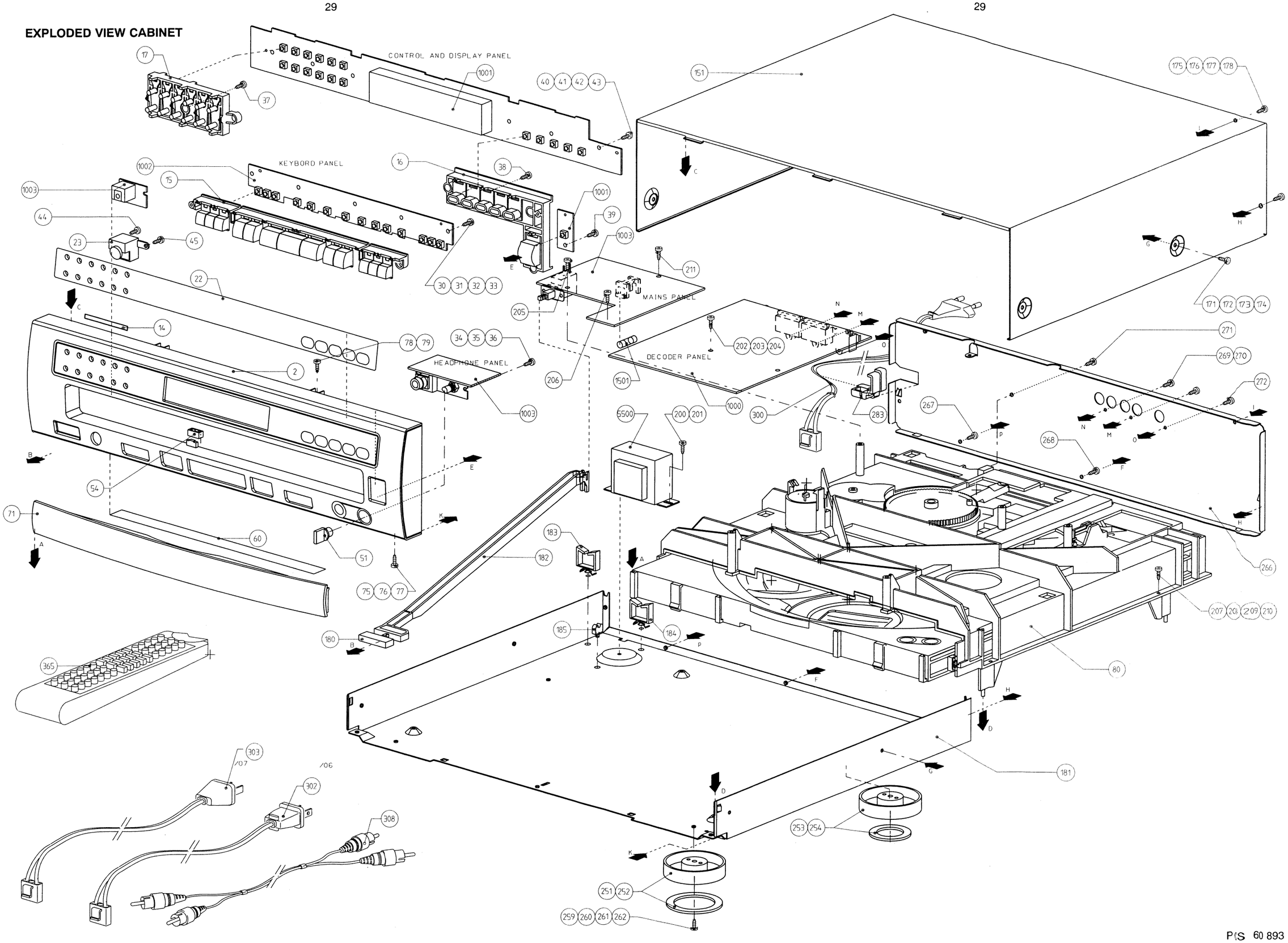
29

EXPLODED VIEW CABINET



29

EXPLODED VIEW CABINET



it.

268.

ELECTRICAL PARTS LIST

POWER SUPPLY PANEL

MISCELLANEOUS

1500 ⚠	4822 276 13277	MAINS SWITCH
1501 ⚠	4822 252 51167	FUSE T 200mA(/UBL)
1501 ⚠	4822 071 51001	FUSE T 100mA (CC65/02B/07B)
1501 ⚠	4822 252 51168	FUSE T 80mA (CC45/02B/07B)

CAPACITORS

2500	4822 126 11585	22nF +80-20% 25V
2501	4822 126 11585	22nF +80-20% 25V
2502	4822 126 11585	22nF +80-20% 25V
2503	4822 126 11585	22nF +80-20% 25V
2504	4822 126 11585	22nF +80-20% 25V
2505	4822 126 11585	22nF +80-20% 25V
2506	4822 124 80951	3300µF 20% 16V(CC65)
2506	4822 124 40784	3300µF 20% 16V(CC45)
2507	4822 126 12882	100nF +80-20% 50V
2508	5322 124 22094	220µF 20% 50V
2509	4822 124 41596	22µF 20% 50V
2510	4822 124 80949	2200µF 20% 16V(CC65)
2510	4822 124 80253	2200µF 20% 25V(CC45)
2544	4822 126 10454	3,3nF 20% 400V
2560	4822 124 40849	330µF 20% 16V

RESISTORS

3560	4822 050 11002	1k 1% 0,4W

DIODES & IC

6500	5322 130 30684	1N4002GP
6501	5322 130 30684	1N4002GP
6502	5322 130 30684	1N4002GP
6503	5322 130 30684	1N4002GP
6504	5322 130 30684	1N4002GP
6505	4822 130 31981	BZX79-C3V9
6506	5322 130 32586	BZV85-C7V5
6507	5322 130 30684	1N4002GP
6508	5322 130 30684	1N4002GP
6560	5322 130 30684	1N4002GP
6561	5322 130 30684	1N4002GP
6562	4822 130 31981	BZX79-C3V9
7500	4822 209 31257	MC79L24ACP

SERVO PANEL

MISCELLANEOUS

	4822 323 50157	FLEXFOIL 18P
1802	4822 242 73557	RESONATOR 8.46MHz
1820	4822 276 13106	TACT SWITCH
1821	4822 276 13106	TACT SWITCH
1830 ⚠	4822 071 51601	FUSE T 160MA
1831 ⚠	4822 071 51601	FUSE T 160MA
1840	4822 276 13114	TACT SWITCH
1841	4822 276 13114	TACT SWITCH

CAPACITORS

2800	4822 126 10326	180pF 5% 63V
2801	4822 126 10326	180pF 5% 63V
2802	5322 122 31863	330pF 5% 50V
2803	5322 122 31865	1,5nF 10% 63V
2804	5322 116 80853	560pF 5% 63V
2805	4822 122 33575	220pF 5%NPO 50V
2806	4822 122 33575	220pF 5%NPO 50V
2807	4822 122 33575	220pF 5%NPO 50V
2808	4822 122 33575	220pF 5%NPO 50V
2809	4822 122 33575	220pF 5%NPO 50V
2810	4822 122 33575	220pF 5%NPO 50V
2811	4822 122 33496	100nF 10% 63V
2812	5322 124 21643	22µF 20% 40V
2813	5322 122 32654	22nF 10% 63V
2814	4822 122 33496	100nF 10% 63V
2815	4822 122 33496	100nF 10% 63V
2817	4822 126 10326	180pF 5% 63V
2818	4822 122 33496	100nF 10% 63V
2819	5322 124 41431	22µF 20% 35V
2820	5322 126 10465	3,9nF 10% 63V
2821	4822 122 33496	100nF 10% 63V
2822	5322 124 41431	22µF 20% 35V
2823	4822 122 33496	100nF 10% 63V
2824	4822 126 10326	180pF 5% 63V
2825	4822 122 32627	2.7nF 10% 50V
2826	4822 122 33496	100nF 10% 63V
2827	4822 122 33175	2,2nF 20% 50V
2828	4822 122 33496	100nF 10% 63V
2829	5322 124 41431	22µF 20% 35V
2830	4822 122 33342	33nF 10% 63V
2831	4822 122 33496	100nF 10% 63V
2832	5322 124 41431	22µF 20% 35V
2833	4822 122 33496	100nF 10% 63V
2834	5322 124 41431	22µF 20% 35V
2835	4822 122 33496	100nF 10% 63V
2836	5322 122 32452	47pF 5% 63V
2837	5322 122 32452	47pF 5% 63V
2838	5322 122 32531	100pF 5% 50V
2839	5322 122 32965	18pF 5%NPO 50V
2840	4822 126 10326	180pF 5% 63V
2841	5322 124 21643	22µF 20% 40V
2842	5322 122 31863	330pF 5% 50V
2843	4822 126 10326	180pF 5% 63V
2856	4822 122 33496	100nF 10% 63V
2896	5322 124 41431	22µF 20% 35V
2897	4822 124 40433	47µF 20% 25V
2898	4822 124 40433	47µF 20% 25V

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RESISTORS

3800	4822 116 52239	120k 5% 0,5W
3801	4822 116 52233	10k 5% 0,5W
3802	4822 116 52239	120k 5% 0,5W
3803	4822 116 52233	10k 5% 0,5W
3804	4822 116 52291	56k 5% 0,5W
3805	4822 116 52233	10k 5% 0,5W
3806	4822 116 52233	10k 5% 0,5W
3807	4822 116 52233	10k 5% 0,5W
3808	4822 116 52233	10k 5% 0,5W
3809 ⚠	4822 052 10478	4Ω7 5% 0,33W
3810 ⚠	4822 052 10478	4Ω7 5% 0,33W
3811	4822 051 20105	1M 5% 0,1W
3812	4822 050 11002	1k 1% 0,4W
3813	4822 050 11002	1k 1% 0,4W
3814	4822 116 52233	10k 5% 0,5W
3815	4822 116 52175	100Ω 5% 0,5W
3816	4822 051 20103	10k 5% 0,1W
3817	4822 116 52244	15k 5% 0,5W
3818	4822 116 52244	15k 5% 0,5W
3820	4822 051 20682	6k8 5% 0,1W
3821	4822 116 52283	4k7 5% 0,5W
3822	4822 116 52233	10k 5% 0,5W
3824 ⚠	4822 052 10229	22Ω 5% 0,33W
3825	4822 116 52244	15k 5% 0,5W
3826	4822 116 52244	15k 5% 0,5W
3827	4822 051 20103	10k 5% 0,1W
3828	4822 116 52296	6k8 5% 0,5W
3829	4822 116 52233	10k 5% 0,5W
3830 ⚠	4822 052 10229	22Ω 5% 0,33W
3831	4822 051 20153	15k 5% 0,1W
3832	4822 116 52244	15k 5% 0,5W
3833 ⚠	4822 052 10478	4Ω7 5% 0,33W
3834	4822 117 10362	7k5 1% 0,1W
3835	4822 116 52296	6k8 5% 0,5W
3836	4822 116 52233	10k 5% 0,5W
3837 ⚠	4822 052 10478	4Ω7 5% 0,33W
3838 ⚠	4822 052 10229	22Ω 5% 0,33W
3839	4822 116 52175	100Ω 5% 0,5W
3840	4822 116 52277	39k 5% 0,5W
3841	4822 050 11002	1k 1% 0,4W
3842	4822 116 52175	100Ω 5% 0,5W
3843	4822 116 52249	1k8 5% 0,5W
3844	4822 116 52175	100Ω 5% 0,5W
3845	4822 051 20431	430Ω 5% 0,1W
3846	4822 051 20431	430Ω 5% 0,1W
3847	4822 051 20334	330k 5% 0,1W
3849	4822 051 20303	30k 5% 0,1W
3850	4822 050 11002	1k 1% 0,4W
3851	4822 051 20362	3k6 5% 0,1W
3852	4822 116 52175	100Ω 5% 0,5W
3853	4822 116 52249	1k8 5% 0,5W
3854	4822 050 11002	1k 1% 0,4W
3855	4822 051 20431	430Ω 5% 0,1W
4850	4822 116 52231	820Ω 5% 0,5W
4851	4822 116 52238	12k 5% 0,5W
4852	4822 051 20123	12k 5% 0,1W
4853	4822 116 52238	12k 5% 0,5W
4854	4822 116 52238	12k 5% 0,5W
4855 ⚠	4822 052 10229	22Ω 5% 0,33W
4856 ⚠	4822 052 10108	1Ω 5% 0,33W
4857	4822 116 52284	47k 5% 0,5W
4858	4822 116 52284	47k 5% 0,5W
4890	4822 051 20271	270Ω 5% 0,1W
4892	4822 116 52217	270Ω 5% 0,5W
4893	4822 116 52217	270Ω 5% 0,5W
4894	4822 051 10008	0Ω 5% 0,25W
4895	4822 051 10008	0Ω 5% 0,25W
4896	4822 051 10008	0Ω 5% 0,25W
4897	4822 051 10008	0Ω 5% 0,25W
4898	4822 051 10008	0Ω 5% 0,25W
4899	4822 051 10008	0Ω 5% 0,25W

COILS

5801	4822 157 53447	COIL
5802	4822 157 53447	COIL

TRANSISTORS & IC'S

7800	4822 209 31064	TDA1301T/N1
7801	4822 209 71579	MC7805.2
7802	4822 209 72587	TCA0372
7803	4822 209 72587	TCA0372
7820	4822 130 60887	BF840
7821	5322 130 41982	BC848B
7822	5322 130 41983	BC858B
7823	5322 130 41982	BC848B
7824	5322 130 41982	BC848B
7825	4822 130 42675	BC818

26	4
1010	4
1050	5
1101	4
1250	4
1300	4
1602	4
1750	4
2100	4
2101	5
2102	5
2103	4
2105	5
2110	4
2111	5
2112	4
2113	4
2114	5
2115	5
2116	4
2118	5
2140	4
2141	4
2142	5
2143	5
2251	4
2253	4
2254	5
2301	5
2302	4
2302	4
2303	4
2303	4
2304	5
2305	5
2306	4
2306	4
2307	4
2307	4
2308	4
2309	4
2313	4
2314	4
2317	4
2330	4
2331	4
2332	4
2333	4
2334	4
2335	4
2336	4
2337	4
2338	4
2339	4
2501	4

RESISTORS

3800		4822 116 52239	120k 5% 0,5W
3801		4822 116 52233	10k 5% 0,5W
3802		4822 116 52239	120k 5% 0,5W
3803		4822 116 52233	10k 5% 0,5W
3804		4822 116 52291	56k 5% 0,5W
3805		4822 116 52233	10k 5% 0,5W
3806		4822 116 52233	10k 5% 0,5W
3807		4822 116 52233	10k 5% 0,5W
3808		4822 116 52233	10k 5% 0,5W
3809	⚠	4822 052 10478	4Ω7 5% 0,33W
3810	⚠	4822 052 10478	4Ω7 5% 0,33W
3811		4822 051 20105	1M 5% 0,1W
3812		4822 050 11002	1k 1% 0,4W
3813		4822 050 11002	1k 1% 0,4W
3814		4822 116 52233	10k 5% 0,5W
3815		4822 116 52175	100Ω 5% 0,5W
3816		4822 051 20103	10k 5% 0,1W
3817		4822 116 52244	15k 5% 0,5W
3818		4822 116 52244	15k 5% 0,5W
3820		4822 051 20682	6k8 5% 0,1W
3821		4822 116 52283	4k7 5% 0,5W
3822		4822 116 52233	10k 5% 0,5W
3824	⚠	4822 052 10229	22Ω 5% 0,33W
3825		4822 116 52244	15k 5% 0,5W
3826		4822 116 52244	15k 5% 0,5W
3827		4822 051 20103	10k 5% 0,1W
3828		4822 116 52296	6k8 5% 0,5W
3829		4822 116 52233	10k 5% 0,5W
3830	⚠	4822 052 10229	22Ω 5% 0,33W
3831		4822 051 20153	15k 5% 0,1W
3832		4822 116 52244	15k 5% 0,5W
3833	⚠	4822 052 10478	4Ω7 5% 0,33W
3834		4822 117 10362	7k5 1% 0,1W
3835		4822 116 52296	6k8 5% 0,5W
3836		4822 116 52233	10k 5% 0,5W
3837	⚠	4822 052 10478	4Ω7 5% 0,33W
3838	⚠	4822 052 10229	22Ω 5% 0,33W
3839		4822 116 52175	100Ω 5% 0,5W
3840		4822 116 52277	39k 5% 0,5W
3841		4822 050 11002	1k 1% 0,4W
3842		4822 116 52175	100Ω 5% 0,5W
3843		4822 116 52249	1k8 5% 0,5W
3844		4822 116 52175	100Ω 5% 0,5W
3845		4822 051 20431	430Ω 5% 0,1W
3846		4822 051 20431	430Ω 5% 0,1W
3847		4822 051 20334	330k 5% 0,1W
3849		4822 051 20303	30k 5% 0,1W
3850		4822 050 11002	1k 1% 0,4W
3851		4822 051 20362	3k6 5% 0,1W
3852		4822 116 52175	100Ω 5% 0,5W
3853		4822 116 52249	1k8 5% 0,5W
3854		4822 050 11002	1k 1% 0,4W
3855		4822 051 20431	430Ω 5% 0,1W
4850		4822 116 52231	820Ω 5% 0,5W
4851		4822 116 52238	12k 5% 0,5W
4852		4822 051 20123	12k 5% 0,1W
4853		4822 116 52238	12k 5% 0,5W
4854		4822 116 52238	12k 5% 0,5W
4855	⚠	4822 052 10229	22Ω 5% 0,33W
4856	⚠	4822 052 10108	1Ω 5% 0,33W
4857		4822 116 52284	47k 5% 0,5W
4858		4822 116 52284	47k 5% 0,5W
4890		4822 051 20271	270Ω 5% 0,1W
4892		4822 116 52217	270Ω 5% 0,5W
4893		4822 116 52217	270Ω 5% 0,5W
4894		4822 051 10008	0Ω 5% 0,25W
4895		4822 051 10008	0Ω 5% 0,25W
4896		4822 051 10008	0Ω 5% 0,25W
4897		4822 051 10008	0Ω 5% 0,25W
4898		4822 051 10008	0Ω 5% 0,25W
4899		4822 051 10008	0Ω 5% 0,25W

COILS

5801	4822 157 53447	COIL
5802	4822 157 53447	COIL

TRANSISTORS & IC'S

7800	4822 209 31064	TDA1301T/N1
7801	4822 209 71579	MC7805.2
7802	4822 209 72587	TCA0372
7803	4822 209 72587	TCA0372
7820	4822 130 60887	BF840
7821	5322 130 41982	BC848B
7822	5322 130 41983	BC858B
7823	5322 130 41982	BC848B
7824	5322 130 41982	BC848B
7825	4822 130 42675	BC818

DECODER-DAC PANEL

MISCELLANEOUS

26	4822 255 40991	LED SOCKET
1010	4822 267 51094	FLEX CONNECTOR
1050	5322 242 73686	RESONATOR 12 MHz
1101	4822 242 81705	CRYSTAL33.86 MHz
1250	4822 267 31729	DIGITAL OUT SOCKET
1300	4822 267 41064	ANALOG OUT SOCKET
1602	4822 276 13106	TACT SWITCH
1750	4822 267 31817	RC5 SOCKET

CAPACITORS

2100	4822 122 33175	2,2nF 20% 50V
2101	5322 122 32452	47pF 5% 63V
2102	5322 122 32654	22nF 10% 63V
2103	4822 122 33496	100nF 10% 63V
2105	5322 122 32531	100pF 5% 50V
2110	4822 124 40433	47µF 20% 25V
2111	5322 122 32654	22nF 10% 63V
2112	4822 122 33847	10pF 5% 50V
2113	4822 122 33191	22pF 5% 50V
2114	5322 122 34123	1nF 10% 50V
2115	5322 122 32654	22nF 10% 63V
2116	4822 124 40433	47µF 20% 25V
2118	5322 122 32452	47pF 5% 63V
2140	4822 122 32542	47nF 10% 63V
2141	4822 122 33496	100nF 10% 63V
2142	5322 122 32452	47pF 5% 63V
2143	5322 122 32654	22nF 10% 63V
2251	4822 124 40248	10µF 20% 63V
2253	4822 122 33496	100nF 10% 63V
2254	5322 122 32654	22nF 10% 63V
2301	5322 122 32268	470pF 10% 50V
2302	4822 124 40433	47µF 20% 25V(CC45)
2302	4822 124 80953	10µF 50V(CC65)
2303	4822 124 40433	47µF 20% 25V(CC45)
2303	4822 124 80953	10µF 50V(CC65)
2304	5322 122 32661	56pF 5% 50V
2305	5322 122 32661	56pF 5% 50V
2306	4822 124 80865	10µF 20% 25V(CC45)
2306	4822 124 80954	47µF 6,3V(CC65)
2307	4822 124 80865	10µF 20% 25V(CC45)
2307	4822 124 80954	47µF 6,3V(CC65)
2308	4822 122 33575	220pF 5%NPO 50V
2309	4822 122 33575	220pF 5%NPO 50V
2313	4822 124 40433	47µF 20% 25V
2314	5322 122 32268	470pF 10% 63V
2317	5322 122 32654	22nF 10% 63V
2330	4822 122 33496	100nF 10% 63V
2331	4822 124 40433	47µF 20% 25V
2332	4822 122 33496	100nF 10% 63V
2333	4822 124 40433	47µF 20% 25V
2334	4822 122 33496	100nF 10% 63V
2335	4822 124 40433	47µF 20% 25V
2336	4822 122 33496	100nF 10% 63V
2337	4822 124 80952	47µF 25V(ONLY CC65)
2338	4822 126 11585	22nF +80-20% 25V
2339	4822 126 11585	22nF +80-20% 25V
2501	4822 122 33496	100nF 10% 63V
2502	4822 122 33496	100nF 10% 63V
2504	4822 122 33496	100nF 10% 63V
2600	4822 122 33496	100nF 10% 63V
2601	5322 122 32654	22nF 10% 63V
2602	5322 122 32654	22nF 10% 63V
2701	5322 122 32654	22nF 10% 63V
2703	5322 122 32654	22nF 10% 63V
2704	5322 122 32531	100pF 5% 50V
2705	5322 122 32531	100pF 5% 50V
2706	5322 122 32531	100pF 5% 50V
2707	5322 122 32654	22nF 10% 63V
2740	4822 124 40433	47µF 20% 25V
2741	5322 122 32654	22nF 10% 63V
2742	5322 122 32654	22nF 10% 63V

RESISTORS

3100		4822 051 20222	2k2 5% 0,1W
3101		4822 051 20223	22k 5% 0,1W
3102		4822 116 52175	100Ω 5% 0,5W
3107		4822 051 20331	330Ω 5% 0,1W
3108		4822 051 20221	220Ω 5% 0,1W
3109		4822 051 20221	220Ω 5% 0,1W
3110		4822 051 20221	220Ω 5% 0,1W
3111		4822 051 20221	220Ω 5% 0,1W
3113	⚠	4822 052 10338	3Ω3 5% 0,33W
3114		4822 051 20105	1M 5% 0,1W
3115	⚠	4822 052 10338	3Ω3 5% 0,33W
3116		4822 051 20101	100Ω 5% 0,1W
3117		4822 051 20008	0Ω JUMP. (0805)
3140		4822 051 20333	33k 5% 0,1W
3141		4822 051 20333	33k 5% 0,1W
3142		4822 051 20333	33k 5% 0,1W
3143		4822 116 52234	100k 5% 0,5W
3144		4822 116 52234	100k 5% 0,5W
3145	⚠	4822 052 10229	22Ω 5% 0,33W
3146		4822 051 20101	100Ω 5% 0,1W
3147		4822 116 52283	4k7 5% 0,5W
3252		4822 051 20689	68Ω 5% 0,1W
3302		4822 051 20103	10k 5% 0,1W
3303		4822 051 20103	10k 5% 0,1W
3304		4822 051 20153	15k 5% 0,1W
3305		4822 051 20153	15k 5% 0,1W
3306		4822 051 20223	22k 5% 0,1W
3307		4822 051 20223	22k 5% 0,1W
3308		4822 051 10102	1k 2% 0,25W
3309		4822 051 10102	1k 2% 0,25W
3310		4822 051 20008	0Ω JUMP. (0805)
3330	⚠	4822 052 10338	3Ω3 5% 0,33W
3331	⚠	4822 052 10338	3Ω3 5% 0,33W
3332	⚠	4822 052 10338	3Ω3 5% 0,33W
3333	⚠	4822 052 10478	4Ω7 5% 0,33W
3334	⚠	4822 052 10478	4Ω7 5% 0,33W
3360		4822 116 52284	47k 5% 0,5W
3361		4822 116 52284	47k 5% 0,5W
3362		4822 116 52258	220k 5% 0,5W
3363		4822 051 20224	220k 5% 0,1W
3364		4822 051 20222	2k2 5% 0,1W
3365		4822 051 20222	2k2 5% 0,1W
3366		4822 116 52256	2k2 5% 0,5W
3367		4822 116 52256	2k2 5% 0,5W
3368		4822 051 20103	10k 5% 0,1W
3369		4822 051 20103	10k 5% 0,1W
3376		4822 051 10102	1k 2% 0,25W

3377		4822 051 10102	1k 2% 0,25W
3500		4822 051 20561	560Ω 5% 0,1W
3501		4822 051 10102	1k 2% 0,25W
3502		4822 051 20223	22k 5% 0,1W
3503		4822 051 20223	22k 5% 0,1W
3504		4822 051 20223	22k 5% 0,1W
3505		4822 051 20472	4k7 5% 0,1W
3508	⚠	4822 052 10108	1Ω 5% 0,33W
3601		4822 051 20123	12k 5% 0,1W
3602		4822 051 20123	12k 5% 0,1W
3603	⚠	4822 052 10229	22Ω 5% 0,33W
3604		4822 116 52276	3k9 5% 0,5W
3606		4822 116 52238	12k 5% 0,5W
3607		4822 051 20123	12k 5% 0,1W
3608	⚠	4822 052 10108	1Ω 5% 0,33W
3609		4822 051 20224	220k 5% 0,1W
3700		4822 051 20224	220k 5% 0,1W
3701		4822 116 52257	22k 5% 0,5W
3703		4822 051 20223	22k 5% 0,1W
3706		4822 116 52257	22k 5% 0,5W
3707		4822 116 52257	22k 5% 0,5W
3708		4822 051 20223	22k 5% 0,1W
3709		4822 051 20223	22k 5% 0,1W
3710		4822 051 20223	22k 5% 0,1W
3711		4822 051 20223	22k 5% 0,1W
3714		4822 051 20223	22k 5% 0,1W
3715		4822 051 20103	10k 5% 0,1W
3716		4822 051 20472	4k7 5% 0,1W
3717		4822 051 20223	22k 5% 0,1W
3718		4822 051 20223	22k 5% 0,1W
3719		4822 050 11002	1k 1% 0,4W
3720		4822 050 11002	1k 1% 0,4W
3723		4822 051 20223	22k 5% 0,1W
3724		4822 116 52257	22k 5% 0,5W
3725		4822 050 11002	1k 1% 0,4W
3726		4822 116 52257	22k 5% 0,5W
3727		4822 051 20562	5k6 5% 0,1W
3735		4822 051 20223	22k 5% 0,1W
3736		4822 051 20223	22k 5% 0,1W
3737		4822 051 20223	22k 5% 0,1W
3738		4822 051 20223	22k 5% 0,1W
3740		4822 051 20223	22k 5% 0,1W
3743	⚠	4822 052 10109	10Ω 5% 0,33W
3744		4822 116 52175	100Ω 5% 0,5W
3745		4822 051 20473	47k 5% 0,1W
3746		4822 051 20183	18k 5% 0,1W
3747		4822 051 20473	47k 5% 0,1W
3748		4822 051 20473	47k 5% 0,1W
3749		4822 116 52284	47k 5% 0,5W
3750		4822 051 20473	47k 5% 0,1W
3751		4822 051 10102	1k 2% 0,25W
3752		4822 051 20223	22k 5% 0,1W
4000		4822 051 10008	0Ω 5% 0,25W
4001		4822 051 10008	0Ω 5% 0,25W
4002		4822 051 20008	0Ω JUMP. (0805)
4005		4822 051 10008	0Ω 5% 0,25W
4006		4822 051 10008	0Ω 5% 0,25W
4009		4822 051 10008	0Ω 5% 0,25W
4011		4822 051 10008	0Ω 5% 0,25W
4012		4822 051 10008	0Ω 5% 0,25W

COILS

5100	4822 157 62552	2,2μH
5250	4822 157 70601	DIG.OUT TRAFO

DIODES, TRANSISTORS & IC'S

6360	4822 130 30621	1N4148
6361	4822 130 30621	1N4148
6500	4822 130 31981	BZX79-C3V9
6740	4822 130 31983	BAT85
7100	4822 209 33339	SAA7345GP/M5
7300	4822 209 33252	TDA1549T/N1
7301	4822 209 83274	NJM4560D(CC45)
7301	4822 209 31153	NJM2114D(CC65)
7360	5322 130 42012	BC858
7361	5322 130 42012	BC858
7362	4822 130 42804	BC817-25
7363	4822 130 42804	BC817-25
7364	4822 130 42804	BC817-25
7365	4822 130 42804	BC817-25
7500	5322 130 42012	BC858
7501	5322 130 42012	BC858
7502	4822 209 80817	L7805CV
7600	4822 209 72587	TCA0372
7601	4822 130 83031	BPW85A
7700	4822 209 33695	MC68HC11ER32
7740	5322 130 42012	BC858
7741	4822 130 61207	BC848
7742	4822 130 61207	BC848

DISPLAY PANEL

MISCELLANEOUS

	4822 256 91908	DISPLAY HOLDER
1400	4822 130 91388	DISPLAY CC45/65 MTZ
1402	4822 242 72527	RESONATOR 4MHz
1420	4822 276 13114	TACT SWITCH
1421	4822 276 13114	TACT SWITCH
1422	4822 276 13114	TACT SWITCH
1423	4822 276 13114	TACT SWITCH
1424	4822 276 13114	TACT SWITCH
1425	4822 276 13114	TACT SWITCH(CC65)
1426	4822 276 13114	TACT SWITCH(CC65)
1427	4822 276 13114	TACT SWITCH(CC65)
1428	4822 276 13114	TACT SWITCH(CC65)
1429	4822 276 13114	TACT SWITCH(CC65)
1430	4822 276 13114	TACT SWITCH(CC65)
1431	4822 276 13114	TACT SWITCH(CC65)
1432	4822 276 13114	TACT SWITCH(CC65)
1433	4822 276 13114	TACT SWITCH(CC65)
1434	4822 276 13114	TACT SWITCH(CC65)
1435	4822 276 13114	TACT SWITCH(CC65)
1436	4822 276 13114	TACT SWITCH(CC65)
1437	4822 276 13213	TACT SWITCH

CAPACITORS

2402	5322 124 21643	22µF 20% 40V
2404	5322 124 21643	22µF 20% 40V
2405	4822 126 11585	22nF +80-20% 25V

RESISTORS

3400	4822 116 52258	220k 5% 0,5W
3401	4822 116 52257	22k 5% 0,5W
3402	4822 116 52257	22k 5% 0,5W
3403	4822 116 52257	22k 5% 0,5W
3404	4822 116 52257	22k 5% 0,5W
3406	4822 116 52257	22k 5% 0,5W
3407 ⚠	4822 052 10108	1Ω 5% 0,33W
3410	4822 116 52234	100k 5% 0,5W
3411	4822 116 52234	100k 5% 0,5W
3412	4822 116 52175	100Ω 5% 0,5W
3413	4822 116 52175	100Ω 5% 0,5W

DIODES, TRANSISTORS & I.C.'s

6420	4822 130 30621	1N4148
6421	4822 130 30621	1N4148
6422	4822 130 30621	1N4148
6423	4822 130 30621	1N4148
6424	4822 130 30621	1N4148
7400	4822 209 30249	TMP47C212AN
7401	4822 130 40938	BC548
7402	4822 130 40938	BC548

KEYBOARD PANEL

1438	4822 276 13114	TACT SWITCH
1439	4822 276 13114	TACT SWITCH
1440	4822 276 13213	TACT SWITCH
1441	4822 276 13114	TACT SWITCH
1442	4822 276 13213	TACT SWITCH
1443	4822 276 13213	TACT SWITCH
1444	4822 276 13213	TACT SWITCH
1445	4822 276 13213	TACT SWITCH
1446	4822 276 13213	TACT SWITCH
1447	4822 276 13213	TACT SWITCH
1448	4822 276 13114	TACT SWITCH
1449	4822 276 13114	TACT SWITCH
1450	4822 276 13114	TACT SWITCH
6425	4822 130 30621	1N4148
6426	4822 130 30621	1N4148
6427	4822 130 30621	1N4148

IR PANEL

2460	4822 126 11585	22nF +80-20% 25V
3460	4822 116 52284	47k 5% 0,5W
7460	4822 214 52009	GP1U58XP

HEADPHONE PANEL

1371	4822 267 31453	HEADPHONE SOCKET
2380	4822 126 11585	22nF +80-20% 25V
2381	4822 121 51387	10nF 20% 16V
2382	4822 121 51387	10nF 20% 16V
2383	4822 126 12882	100nF +80-20% 50V
3380	4822 101 21199	10kX2 20% 0,025W
3381	4822 116 52233	10k 5% 0,5W
3382	4822 116 52233	10k 5% 0,5W
3383	4822 116 52244	15k 5% 0,5W
3384	4822 116 52244	15k 5% 0,5W
3385	4822 116 52206	120Ω 5% 0,5W
3386	4822 116 52206	120Ω 5% 0,5W
7380	4822 209 82362	NJM4556D

MAINS VOLTAGE

5500 ⚠	4822 146 31373	MAINS TRAFO FOR CC45/02B/07B
5500 ⚠	4822 146 31374	MAINS TRAFO FOR CC45/UBL
5500 ⚠	4822 146 31406	MAINS TRAFO FOR CC65/02B/07B
5500 ⚠	4822 146 31405	MAINS TRAFO FOR CC65/UBL